

**RESPONSE TO COMMENTS (part 2)
on 2002-2004 STATE OF NEW MEXICO
§303(d) LIST FOR ASSESSED SURFACE
WATERS:**

LANL COMMENTS ON 303(d) LIST FOR 2002-2004
ATTACHMENT A
AUGUST 8, 2002

GENERAL COMMENTS-LANL/NON-LANL CANYONS

COMMENT:

1) The on-line announcement for the draft ROD states that it is not submitted to the federal Environmental Protection Agency (EPA) for approval. However, under the Clean Water Act section 303(d)(2), 42 USC 1313(d)(2), the EPA must approve the draft list. The NMED should amend the draft ROD to remove any assessment units or other parameters that the EPA disapproves.

****RESPONSE:** The ROD is a historical record used to document changes to the 303(d) list. We amend the ROD accordingly based on USEPA action, WQCC actions, and staff assessments. We never remove assessment units from the ROD because we need to keep a record of the history of that listing in the ROD even after the assessment unit has been removed from a final 303(d) list. To date, EPA has never removed any assessment units or parameters from a draft 303(d) list that we have sent to them for review.*

COMMENT:

2) Probable Sources of Impairment to canyons on and near LANL: In 2000, the Cerro Grande fire within the contributing watershed resulted in debris flows, erosion, and sedimentation that filled Los Alamos reservoir with organic debris, sediments, and potential contaminants adhered to the sediments. Physical and chemical changes resulted. Fish kill was observed. Therefore, this reservoir was listed as Not Supporting for unknown toxicity until further study. **This should apply to all canyons.**

****RESPONSE:** Agreed. Probable Source code 8080 -- Watershed runoff following forest fire -- was added to all listings in the Cerro Grande fire area.*

COMMENTS (3-10):

3) **Watershed Management Program.** The Laboratory's Watershed Management Program is responsible for evaluating the Laboratory's impacts to surface water, alluvial groundwater, soils, and sediments on and off the Lab. The program's objectives include full compliance with water quality standards, and evaluating and reducing risk to human health and the environment. The Watershed Management Program is based on EPA guidance on managing from a watershed perspective. For corrective action activities, NMED has approved a watershed approach.

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- 4) **Potential Release Sites (PRSs).** Since 1992, the Laboratory has installed, inspected, and maintained erosion controls at PRSs. In 1997, the Laboratory developed Standard Operating Procedure (SOP) 2.01 to identify PRSs that may adversely impact surface water quality. PRSs were prioritized based on their erosion potential using criteria such as proximity to watercourse, percentage of slope, percentage of vegetative cover, and runoff and run-on factors. NMED's Surface Water Quality Bureau saw this process as a model for other storm water permitted facilities in the state.
- 5) **Surface Water Assessment Team (SWAT).** The Laboratory's SWAT Team was established in 1997. The team includes the Laboratory, U. S. Department of Energy (DOE), NMED's Hazardous Waste Bureau, NMED's Surface Water Quality Bureau and NMED's DOE Oversight Bureau. Based on evaluations of erosion potential, SWAT members recommended installation of Best Management Practices (BMPs) at PRSs with high erosion potential. Erosion assessments have been completed at 1400 sites; 340 sites have moderate to high erosion potential. BMPs have been placed at 220 sites, at a cost of over \$500,000. The SWAT determined that 80 sites did not require BMPs due to adequate stabilization, minimal sediment migration potential or lack of contamination. The remaining 40 sites are awaiting SWAT review. This represents a 90% completion rate for evaluating the moderate to high erosion potential SWMUs/AOCs at the Laboratory. The controls include run-on diversion, flow dissipation, sediment filtration, sediment retention, and soil stabilization.

The Laboratory inspects and maintains these erosion controls quarterly or after a half-inch rain event. After the Cerro Grande Fire, the Laboratory coordinated with NMED to review 65 PRSs burned by the fire, and replaced damaged erosion controls.

- 6) **Laboratory's Site-Wide Monitoring Program.** For more than 30 years, the Laboratory has operated its Environmental Surveillance Program. This program has always included monitoring of surface water, alluvial groundwaters, sediments, and soils. The Lab has voluntarily expanded the intensity of runoff monitoring over the past seven years to now include nearly 80 automated gaging stations across the Laboratory. For storm water, the Laboratory is one of the most intensively monitored facilities in the world.
- 7) **NPDES Multi-Sector General Permit (MSGP).** The Laboratory's MSGP is administered by EPA, certified by the NMED-SWQB, and covers point source discharges of storm water from industrial activities. The Laboratory has developed 19 Storm Water Pollution Prevention Plans to control pollutants in storm water from its industrial activities. About 40 of the 80 stations are used to collect samples to comply with the MSGP. However, voluntary monitoring under

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- the Watershed Management Program includes an exhaustive analytical suite at all 80 stations. The analytical requirements under the Watershed Management Program are much more comprehensive than the analytical parameters required for compliance with the MSGP. In the interest of responsible stewardship of the lands entrusted into the Laboratory's care the sampling frequency also exceeds what is required for compliance with the MSGP. Watershed monitoring is designed to detect contamination coming from a Laboratory operation, or from a discharge that has received inadequate treatment, or from an unreported spill, or resulting from erosion of a PRS. The monitoring program is also designed to evaluate impacts from natural sources. This information guides the Laboratory in controlling or remediating impacts from current or historic operations. Watershed monitoring will also indicate whether efforts to revegetate headwaters burned by the Cerro Grande Fire are successful.
- 8) **NPDES Point Source Permit.** In addition to these monitoring and storm water programs, the Laboratory has an NPDES Permit No. NM0028355, issued by EPA and certified by NMED, that contains industrial wastewater discharge limits for 21 outfalls.
- 9) **Erosion Modeling.** In addition to ongoing monitoring programs the Laboratory is continuing to develop a model predicting erosion from PRSs, uncontaminated areas, canyon sides and canyon bottoms. This model will allow the Lab to implement cost effective mitigations with increased confidence. The Watershed Management Program will continue to improve understanding of natural processes at work in the watersheds as they recover from the fire, and improve understanding of the nature and movement of potential contaminants from PRSs and other sources.
- 10) **Improved Communications.** Central to the Laboratory's Watershed Management Program is a commitment to improved coordination among federal and state agencies, Pueblos, municipalities and stakeholders. DOE and the Laboratory formed and are currently active participants in the Pajarito Plateau Watershed Partnership. The Partnership is made up of representatives from NMED, Pueblos, citizen groups, U.S. Forest Service, Bandelier National Monument, and Los Alamos County. Its purpose is to protect, improve and/or restore the quality of water in the Pajarito Plateau Watershed with a focus on erosion control. The Partnership has high-level management support as a working group of the multi-agency East Jemez Natural Resource Council. The Partnership has been awarded a 319 Grant from the State for conducting outreach and demonstration projects. The Partnership is developing another 319 Grant proposal for conducting watershed activities to control erosion.

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***RESPONSE (to COMMENTS 3-10):** *Thank you for you comments regarding LANL's environmental monitoring efforts.*

COMMENT:

11) Public Notice Hotlink to david_hogge@nmenv.state.nm.us is not active.

***RESPONSE:** *The Hotlink is active. It has been checked by our web coordinator and tested from various computers.*

COMMENT:

12) NMED's decision criteria for designated use attainment indicates that two exceedances of any criteria in a five-year period for Livestock Watering and Wildlife Habitat are documented as Partial Support. However, EPA does not recognize the category of Partial Support. Waters listed Partial Support on the 303(d) list, are reported by EPA as Not Supported. A minimum of two samples for non-attainment in storm water events is not good science and not consistent with EPA guidance. It is also inconsistent with NMED's testimony before the WQCC that at least seven samples are required for reliability, as noted above.

***RESPONSE:** *EPA does recognize the category of Partial Support. EPA requires impairments classified as either Partial Support and Not Supported to be placed on the 303(d) list. EPA provides guidance on the distinction between the two categories in a variety of guidance documents (USEPA 1997 and USEPA 2002). NMED staff developed the Procedures for Assessing Standards Attainment for the 303(d) List and 305(b) Report (i.e., assessment protocols) that are currently in place. EPA Region 6 and New Mexico Game and Fish have been and continue to be involved in the development and review of these protocols. The protocols are posted on our web site and are also included as Appendix B in our EPA-approved Quality Assurance Project Plan (QAPP).*

The May 2002 testimony regarding how NMED makes attainment decisions was an incomplete statement of the assessment process. NMED SWQB does not have a minimum data requirement of seven samples for assessment purposes. The following statement is from NMED's Procedures for Assessing Standards Attainment for the 303(d) List and 305(b) Report: "A minimum of seven samples is necessary to make assessments based on percentages. If fewer than seven samples are analyzed, no criteria exceedances shall be assessed as Full Support, one exceedence shall be assessed as Full Support, Impact Observed and more than one exceedence shall be assessed as Not Supported." This statement is a footnote on Tables 3 and 7 which detail the criteria for assessment of Aquatic Life Use Support Using Chemical/Physical Data and Assessment of Primary and Secondary Contact Use Support, respectively. This footnote is not noted on Tables 9 and 10 which detail the criteria for assessment of Livestock Watering Use Support and

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Wildlife Habitat Use Support, respectively. Even so, this footnote is consistent with the criteria for assessment detailed on tables 9 and 10:

Full Support - No exceedence for any one parameter within five years

Full Support, Impacts Observed - One exceedence for any one parameter within five years

Partial Support - Two exceedences for any one parameter within five years

Not Supported - Two or more exceedences for any one parameter within five years

References cited:

USEPA. 1997. Guidelines for preparation of comprehensive state water quality assessments (305(b) reports) and electronic updates). Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

USEPA. 2002. Consolidated Assessment and Listing Methodology (CALM) – Toward a Compendium of Best Practices. Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

COMMENT:

13) The assessment guidance states that if there are no data for four consecutive days to evaluate a chronic criterion, then a chronic screening level of 1.5 times the chronic criterion will be used. This approach differs from the compliance requirements at NMAC 20.6.4.11 which indicate that an exceedance of a chronic criterion shall be evaluated based on the “arithmetic mean of the analytical results of samples” and that a chronic criterion shall not be exceeded more than once every three years.

***RESPONSE:** *In the past, SWQB incorporated seasonal, multiple-day sampling runs into our sampling scheme in order to calculate arithmetic mean for toxicant data with chronic criteria. The original language in NMAC 20.6.4.11.B was consistent with that sampling scheme. EPA maintains that chronic criteria should be met in a waterbody that fully supports its uses. Few States and Tribes, if any, are obtaining composite data over a 4-day sampling period for comparison to chronic criteria due primarily to budgetary and staff time constraints. EPA believes that 4-day composites are not an absolute requirement for evaluating whether chronic criteria are being met while determining use attainment status. EPA affords states the flexibility to define how they will assess use attainment with chronic criterion when 4-day composites are not available (USEPA 1997). In response to EPA’s position, statistical concerns, and a desire to characterize water quality over a larger portion of the hydrograph, SWQB changed sampling schemes. We now sample once monthly from approximately March to October. Accordingly, we added the following footnote to our assessment protocols: “The chronic criteria shall be applied to the arithmetic mean of the analytical results of samples collected using applicable protocols. (206.4.11.B NMAC). The chronic screening level is 1.5 times the chronic criteria and shall be applied to grab samples.”*

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The multiplier of 1.5 was also derived as a means to evaluate small data sets (USEPA 1991). This protocol is NMED's interpretation of NMAC 20.6.4.11.B in light of our change in sampling scheme. NMAC 20.6.4.11.B has been identified as requiring attention during our next triennial review.

References cited:

USEPA. 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001. Washington, D.C. 300 pp.

USEPA. 1997. Guidelines for preparation of comprehensive state water quality assessments (305(b) reports) and electronic updates. Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

COMMENT:

14) Priority Setting. Clean Water Act Section 303(d) requires states to rank the priority of water quality limited waters for TMDL development. NMED's protocol for prioritizing water quality limited waters for TMDL is found in *The Process for Developing Total Maximum Daily Loads for Point Source Wasteload Allocations and Nonpoint Source Load Allocations with the Methodology for Stream Reach Ranking in the State of New Mexico*.

***RESPONSE:** *Thank you for your comment.*

The following is a discussion of relevant facts that should form the basis of a finding, based upon best professional judgment, that none of these waters should be listed as impaired, at least for this 303(d) listing cycle:

COMMENT:

- Role of Cerro Grande Fire: It is notable that the majority of the storm water data were collected after the Cerro Grande fire. In the few instances when there are pre- and post-Cerro Grande fire storm water data available from a given site, the evidence suggests that the occurrence of the fire is largely responsible for the elevated selenium. For example, at Los Alamos Canyon above State Route 4, 23 storm water samples have been collected – 13 prior to the fire; 10 after the fire. All 6 exceedances observed at this site occurred after the fire. Please note further that all but one of the pre-fire samples was analyzed using the “Generic ETVA” method, not an EPA method. Our overall review of the data suggests that results obtained from the non-EPA method may be suspect.

Given the extreme erosion of soils that has occurred following the fire, it is likely that elevated selenium during storm water events is related to fire impacts. Additional evidence of this includes the following: (1) all

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exceedances are from unfiltered samples; filtered samples show no exceedances. This finding means that the selenium is adhering to soil particles being transported in the storm water; (2) the widespread nature of the exceedances, i.e., the elevated selenium in storm water occurs in all canyons.

****RESPONSE:** Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.*

COMMENT:

- Impairment of the Use: The purpose in listing a water as impaired is to document that the beneficial use or uses have not been attained. Moreover, it assumes that all appropriate permits have been issued, e.g., if the issuance of a permit would likely alleviate the problem, then the water may not be listed as impaired and placed on the 303(d) list until the permit is issued and implemented. See 33 USC 1313(d)(10)(A). The selenium criterion established by the Commission for protection of wildlife is based on a chronic exposure scenario. The lack of any exceedances during non-storm water runoff conditions, the brief periods of time when exposure to elevated selenium levels would occur, strongly suggests that no impairment of the wildlife use has occurred.

****RESPONSE:** In the past, SWQB incorporated seasonal, multiple-day sampling runs into our sampling scheme in order to calculate arithmetic mean for toxicant data with chronic criteria. The original language in NMAC 20.6.4.11.B was consistent with that sampling scheme. EPA maintains that chronic criteria should be met in a waterbody that fully supports its uses. Few States and Tribes, if any, are obtaining composite data over a 4-day sampling period for comparison to chronic criteria due primarily to budgetary and staff time constraints. EPA believes that 4-day composites are not an absolute requirement for evaluating whether chronic criteria are being met while determining use attainment status. EPA affords states the flexibility to define how they will assess use attainment with chronic criterion when 4-day composites are not available (USEPA 1997). In response to EPA's position, statistical concerns, and a desire to characterize water quality over a larger portion of the hydrograph, SWQB changed sampling schemes. We now sample once monthly from approximately March to October. Accordingly, we added the following footnote to our assessment protocols:*

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“The chronic criteria shall be applied to the arithmetic mean of the analytical results of samples collected using applicable protocols. (206.4.11.B NMAC). The chronic screening level is 1.5 times the chronic criteria and shall be applied to grab samples.” The multiplier of 1.5 was also derived as a means to evaluate small data sets (USEPA 1991). This protocol is NMED’s interpretation of NMAC 20.6.4.11.B in light of our change in sampling scheme. NMAC 20.6.4.11.B has been identified as requiring attention during our next triennial review.

References cited:

USEPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. EPA/505/2-90-001. Washington, D.C. 300 pp.

USEPA. 1997. *Guidelines for preparation of comprehensive state water quality assessments (305(b) reports) and electronic updates*. Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

COMMENT:

Storm water exceedances in the arid Southwest are acute, temporary events. Exceedance of a standard that occurs during a storm event does not necessarily translate into impairment of the use, or for that matter violation of the water quality standard. The Commission has not established wet weather standards. However, through the promulgation of regulations for the issuance of storm water permits for industrial facilities, the EPA has established “parameter benchmark values” for a number of pollutants (*Final Reissuance of National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit for Industrial Activities*, 65 Federal Register 64746-64880, October 30, 2000):

These benchmarks are “the pollutant concentrations above which EPA determined represent a level of concern. The level of concern is a concentration at which a storm water discharge could potentially impair or contribute to impairing, water quality or affect human health from ingestion of water or fish. The benchmarks are also viewed by EPA as a level that, if below, a facility presents little potential for water quality concern. As such, the benchmarks also provide an appropriate level to determine whether a facility’s storm water pollution prevention measures are successfully implemented. The benchmark concentrations are not effluent limitations and should not be interpreted or adopted as such. These values are merely levels which EPA has used to determine if a storm water discharge from any given facility merits further monitoring to ensure that the facility has been successful in implementing a

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SWPPP [Storm Water Pollution Prevention Plan]. As such, these levels represent a target concentration for a facility to achieve through implementation of pollution prevention measures at the facility. (Page 64767).

Table 3 of the industrial facility storm water regulations provides the parameter benchmark values for various constituents. These benchmarks do not apply to all industrial sectors; however, regardless of their regulatory applicability to Laboratory industrial sectors, they provide a basis for evaluating whether or not elevated levels of selenium in storm water are a water quality concern and a potential source of impairment. The benchmark level for selenium is 238.5 µg/L. A review of all storm water data finds no exceedances of this benchmark value.

Although this benchmark value is substantially greater than the comparable chronic wildlife habitat criteria, the transitory, acute nature of the exceedance this benchmark may be appropriate for consideration. In fact, the 238.5 µg/L selenium value is similar to the most recently developed acute criterion for the lowest CMC of either selenite or selenate, the two key selenium species represented in a total selenium result. The lowest CMC is for selenite, for which a recent evaluation based on current laboratory toxicity data suggested should be 219 µg/L (*Chapter 3, Selenium, in Draft Extant Criteria Evaluation Study Report, Arid West Water Quality Research Project, April 2002*).

Clearly, there is a significant difference between acute and chronic criteria for selenium (219 vs. 5 µg/L). The Laboratory is not questioning the chronic water quality standards established to protect the wildlife habitat use. However, from an assessment perspective, it is important to consider that storm water events themselves are acute events; data collected during low flow conditions, the appropriate time to apply chronic criteria show no exceedances.

***RESPONSE:** *Final Reissuance of National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit for Industrial Activities, 65 Federal Register, October 30, 2000, also states in section IV (B)(5) entitled Compliance with Water Quality Standards:*

...The 1995 MSGP does not specifically address compliance with water quality standards (WQS), other than to exclude from coverage discharges which may contribute to an exceedance of WQS. Today's final MSGP includes the same restriction on eligibility, and in Part 3.3 also includes certain requirements if exceedances occur for discharges covered by the MSGP. If a

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discharge authorized under the final MSGP is later discovered to cause, or have the reasonable potential to cause or contribute to, a violation of a WQS, the permitting authority will inform the permittee of the violation. The permittee must then take all necessary actions to ensure future discharges do not cause or contribute to the violation of WQS, and document these actions in the SWPP. If violations remain or recur, coverage under the MSGP may be terminated by the permitting authority and an alternate permit issued. Today's final MSGP also clarifies that compliance with this requirement does not preclude enforcement actions as provided by the CWA for the underlying violation.

NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Your comments will be taken into consideration during the upcoming revisions of our assessment protocols and the upcoming triennial review. Seasonality concerns are addressed during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.

COMMENT:

- Implementation of Water Quality Control Strategies: The proposed 303(d) listings for Los Alamos, Pajarito, Mortandad, Ancho and Water Canyons state that no NPDES permit has been issued for any of these canyons. This finding is incorrect. The Laboratory is under an NPDES storm water multi-sector general permit for industrial facilities. Accordingly, the Laboratory has established and implemented a LANL-wide Storm water Pollution Prevention Plan (SWPPP). In addition, all other LANL point sources are permitted according to federal NPDES permit requirements.

****RESPONSE:** The number in the "NPDES" field on the draft 303(d) list was electronically generated by a query of our SWQB database that is restricted to include only Active permits. This database tracks Individual NPDES permits only (i.e., it does not include General NPDES permits such as storm water permits). The "NPDES" field on the draft 303(d) list was deleted and replaced with the "Individual Active NPDES Permit" section that will appear towards the bottom of each entry. The expanded information includes Permit Number and Permit Facility Name. NPDES permit information is not a required element on the 303(d) list and was added primarily to alert SWQB staff of potential point sources in the various watersheds for planning and*

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*assessment purposes. We hope to expand the SWQB NPDES Database to include general permits as well as individual permits in the future. Additionally, the SWQB database currently only allows a one-to-one relationship between the Individual NPDES Permit Number field and the associated Receiving Water field. A consequence of this is that permits with multiple receiving water, such as LANL's Individual Permit NM0028355, normally will not be displayed on the 303(d) list under each of the listed canyons. Instead, this permit would be displayed under the Receiving Water of **Rio Grande (San Juan Pueblo bnd to Rio Pueblo de Taos)**. As a temporary solution to this problem, we have appended additional identifying numbers to permit NM0028355 (i.e., -001, -002, -003, -004) so we can designate multiple receiving waters (Sandia, Mortandad, Water, and Los Alamos Canyons, in this example).*

Also, a new Probable Source code was developed termed "Industrial Storm Water Sources" which better describes assessment units that may be impacted by general storm water permits. This code was added to the following assessment units: Guaje Canyon, Los Alamos Canyon, Pueblo Canyon, Rendija Canyon, Mortandad Canyon, and Water Canyon. "Industrial Point Sources" was removed from the following canyons that do not fall under an Individual NPDES permit: Guaje Canyon, Pueblo Canyon, and Rendija Canyon.

COMMENT:

The Laboratory has assembled an extensive collection of storm water data in canyons crossing the Laboratory since the Cerro Grande Fire in May 2000. Mobilization of sediments as a result of that fire has been well documented. Given that the selenium water quality standard is based on unfiltered samples, it is not surprising that elevated selenium levels occur during storm event. The Laboratory and federal agencies are implementing numerous projects to restore vegetative cover in these canyons and to minimize erosion. In addition, as indicated above, numerous BMP programs have been implemented as part of the Laboratory's SWPPP to implement its storm water general permit. At most only 15 months (June 2000 – August 2001) of storm water data have been incorporated into the evaluation of use attainment, insufficient time to determine if all water quality control activities to minimize pollutants in storm water to be evaluated for effectiveness. Typically, reseeded vegetation requires four or five years of growth to reduce storm water runoff flows, and thus to reduced and control pollutant concentrations.

***RESPONSE:** *NMED recognizes the numerous BMP programs that have been implemented as part of the Laboratory's SWPPP to implement its storm water general permit. We also understand that it takes time to determine if BMPs are*

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effective. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. When subsequent data indicates that criteria for associated designated uses are not being exceeded for a particular assessment unit, we will remove it from the 303(d) list. We do not speculate when this will occur.

COMMENT:

- Impairment of Wildlife or Downstream Waters: Critical to the evaluation of impairment is determining whether a beneficial use is actually impaired. The Laboratory is not aware of any evidence demonstrating that wildlife has been impaired by elevated selenium in storm water. In addition, the Laboratory is not aware of any evidence of impaired wildlife in downstream waters as a result of exceedances identified in storm water samples.

****RESPONSE:** The intention of the Clean Water Act is to identify potential water quality impairments and provide mechanisms to take action before these impairments interfere the health of humans, wildlife, and the environments that sustain them. NMED does not have to demonstrate that wildlife has been impaired before listing a stream reach. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols.*

15) LANL Waters (Ancho, Pajarito, Water, Mortandad and Los Alamos Canyons).

COMMENT:

- All five waters on the draft 303(d) list that are on the Laboratory (Ancho, Pajarito, Water, Mortandad and Los Alamos Canyons) are listed as having no NPDES permit. This is incorrect. All LANL sites are covered under the NPDES multi-sector general permit for storm water.

****RESPONSE:** The number in the “NPDES” field on the draft 303(d) list was electronically generated by a query of our SWQB database that is restricted to include only Active permits. This database tracks Individual NPDES permits only (i.e., it does not include General NPDES permits such as storm water permits). The “NPDES” field on the draft 303(d) list was deleted and replaced with the “Individual Active NPDES Permit” section that will appear towards the bottom of each entry. The expanded information includes Permit Number and Permit Facility Name. NPDES permit information is not a required element on the 303(d) list and was added primarily to alert SWQB staff of potential point sources in the various watersheds for planning and assessment purposes. We hope to expand the SWQB NPDES Database to include general permits as well as individual permits in the future. Additionally, the SWQB database currently only allows a one-to-one relationship between the Individual NPDES Permit Number*

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*field and the associated Receiving Water field. A consequence of this is that permits with multiple receiving water, such as LANL's Individual Permit NM0028355, normally will not be displayed on the 303(d) list under each of the listed canyons. Instead, this permit would be displayed under the Receiving Water of **Rio Grande (San Juan Pueblo bnd to Rio Pueblo de Taos)**. As a temporary solution to this problem, we have appended additional identifying numbers to permit NM0028355 (i.e., -001, -002, -003, -004) so we can designate multiple receiving waters (Sandia, Mortandad, Water, and Los Alamos Canyons, in this example).*

Also, a new Probable Source code was developed termed "Industrial Storm Water Sources" which better describes assessment units that may be impacted by general storm water permits. This code was added to the following assessment units: Guaje Canyon, Los Alamos Canyon, Pueblo Canyon, Rendija Canyon, Mortandad Canyon, and Water Canyon. "Industrial Point Sources" was removed from the following canyons that do not fall under an Individual NPDES permit: Guaje Canyon, Pueblo Canyon, and Rendija Canyon.

COMMENT:

- NMED made a preliminary determination in the draft 303(d) list that all five waters do not fully support either livestock watering, wildlife habitat or both uses. We disagree with this finding. However, even if NMED did not change it, this finding coupled with the coverage of all stream reaches by the Laboratory's NPDES storm water permit should result in a priority ranking of #5 rather than #4 .

**RESPONSE: Agreed. The priority rankings were changed to 5.*

COMMENT:

- In the format of the draft 303(d) list as written, the proposed listings suggest that all uses listed are "impaired" by the same causes. For example, the listing for Los Alamos Canyon shows that livestock watering and wildlife habitat are not supported and the causes of impairment are selenium and gross alpha. A review of the data finds no impairment for livestock watering by selenium, and no adequate data supporting impairment by gross alpha. The format should be revised to link the finding of use support directly to the probable cause/source.

**RESPONSE: The 303(d) list is electronically generated through a series of custom queries and reports from the MS Access SWQB database that we developed and populated. We combine this database with the Assessment Database (ADB) Version 1 front-end that was developed by EPA. Unfortunately,*

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ADB has limitations, one of which is that the canned reports in the ADB database front-end are extremely inadequate for relaying information to the public. We have developed a custom report but are still constrained limitations inherent to MS Access reporting functionalities. In the database, selenium impairments are linked to Wildlife Habitat uses and gross alpha impairments are linked to Livestock Watering uses. EPA requires that individual causes are linked to their associated designated uses during electronic reporting. NMED's believes the report format is adequate as it is because: 1) the links are contained in the electronic submittal to EPA, 2) the Water Quality Standards clearly indicate which criteria are associated with each specific designated use, and 3) the suggested format would be awkward in situations where there was greater than a one-to-one relationship between a Probable Cause and Impaired Designated Uses. For example, dissolved aluminum concentrations greater than 5.0 mg/L could lead to impairment of both Irrigation and Aquatic Life designated uses. ADB Version 2 has recently been released with an Oracle back end. We hope the new version will resolve many of the report format limitations we have experienced with Version 1.

COMMENT:

- None of the listings for waters on the LANL list the Cerro Grande Fire as a probable source of impairment as was done for the Los Alamos Reservoir. The impacts from the fire are not limited to this single waterbody. Elevated pollutant levels could be related to erosion of soils that has resulted from this fire (the Laboratory notes that NMED did list erosion and sedimentation as a possible pollutant source, but no specific mention is made of the fire as was done for the Los Alamos Reservoir).

***RESPONSE:** *Agreed. Probable Source code 8080 -- Watershed runoff following forest fire -- was added to all listings in the Cerro Grande fire area.*

COMMENT:

- In the public notice, NMED-SWQB states that "[t]he § 303(d) list identifies waterbodies throughout the states that have been found to **violate** the State's surface water quality standards." (Emphasis added.) The Laboratory disagrees that many of the waterbodies identified, in fact "violate" the Water Quality Control Commission's applicable water quality standards. Under 20.6.4.11.B NMAC, the WQCC has specified that a "violation" of a chronic standard must be based on the arithmetic average of samples "using applicable protocols." Chronic standards must not be exceeded more than once every three years. Moreover, the WQCC has specified that a violation may only be established by samples taken in accordance with EPA approved or accepted methods. 20.6.4.13 NMAC. As discussed more particularly above, the NMED-SWQB proposes to list a number of waterbodies where the sample results are

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insufficient to establish levels in excess of the applicable standards, because the average does not exceed the applicable standard or the sampling and analysis methods used were not in accordance with EPA approved or accepted methods.

****RESPONSE:** In the past, SWQB incorporated seasonal, multiple-day sampling runs into our sampling scheme in order to calculate arithmetic mean for toxicant data with chronic criteria. The original language in NMAC 20.6.4.11.B was consistent with that sampling scheme. EPA maintains that chronic criteria should be met in a waterbody that fully supports its uses. Few States and Tribes, if any, are obtaining composite data over a 4-day sampling period for comparison to chronic criteria due primarily to budgetary and staff time constraints. EPA believes that 4-day composites are not an absolute requirement for evaluating whether chronic criteria are being met while determining use attainment status. EPA affords states the flexibility to define how they will assess use attainment with chronic criterion when 4-day composites are not available (USEPA 1997). In response to EPA's position, statistical concerns, and a desire to characterize water quality over a larger portion of the hydrograph, SWQB changed sampling schemes. We now sample once monthly from approximately March to October. Accordingly, we added the following footnote to our assessment protocols: "The chronic criteria shall be applied to the arithmetic mean of the analytical results of samples collected using applicable protocols. (206.4.11.B NMAC). The chronic screening level is 1.5 times the chronic criteria and shall be applied to grab samples." The multiplier of 1.5 was also derived as a means to evaluate small data sets (USEPA 1991). This protocol is NMED's interpretation of NMAC 20.6.4.11.B in light of our change in sampling scheme. NMAC 20.6.4.11.B has been identified as requiring attention during our next triennial review.*

References cited:

USEPA. 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001. Washington, D.C. 300 pp.

USEPA. 1997. Guidelines for preparation of comprehensive state water quality assessments (305(b) reports) and electronic updates). Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

To interpret NMAC 20.6.4.13.A, we assume methods need to be "accepted" by EPA. EPA accepts methods in ways other than approving them for incorporation into 40 CFR Part 136. In fact, EPA has not approved any new methods for incorporation into 40 CFR Part 136 for quite some time. Incorporation into 40 CFR Part 136 is no longer their only way of accepting new methods because the rule making process is too cumbersome and cannot keep up in a timely fashion with advances in analytical techniques. For example, The United States Environmental Protection Agency (EPA), Office of Water, published

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Method 1668, Revision A: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by HRGC/HRMS in December 1999 (USEPA 1999). Section 1.2, page 1 of the Method states: "This Method is for use in data gathering and monitoring associated with the Clean Water Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, and the Safe Drinking Water Act." Also, NMAC 20.6.4.13.A is redundant as written. NMAC 20.6.4.13.A has been identified as requiring attention during our next triennial review.

- **Threatened and Endangered Species:** The Laboratory conducted a Biological Evaluation (BE) for the Laboratory's Storm Water Multi-Sector General Permit (MSGP). The BE evaluated the potential effects of operations under the NPDES Storm Water MSGP for industrial activities on federally listed Threatened and Endangered (T&E) species and other potentially sensitive species at the Laboratory. Information regarding the BE is documented in the Laboratory publication, LA-UR-01-4657, dated September 28, 2001. Additionally, a BE was conducted for the Laboratory's NPDES point source permit. The BE evaluated the potential effects of the Laboratory's NPDES Permit No. NM0028355 renewal on federally listed T&E species and found no effects so long as point source discharges met their applicable permit limits. Additional information regarding the BE is found in the Laboratory publication, LA-UR-00-2469, dated June 8, 2000.

RECOMMENDATIONS FOR REVISIONS TO PROPOSED 303(d) LIST

COMMENT:

- 1) **Mercury.** The Laboratory believes that there is sufficient uncertainty in the finding that the wildlife habitat use is impaired in Pajarito Canyon (see discussion above), that NMED should remove this proposed listing from the draft 303(d) list.

****RESPONSE:** Total Mercury was removed as a Probable Cause of Non Support for Pajarito Canyon (Rio Grande to headwaters) after re-evaluation of the data. After discussions with DOE Oversight, we removed results coded TOTC (values calculated from other results) and/or coded DUP (duplicate) from our assessment of the Laboratory data. We used only results coded CS (customer sample).*

COMMENT:

- 2) **Selenium.** The Laboratory agrees that exceedances of the selenium chronic criterion have been observed during storm runoff events monitored on the LANL. However, LANL does not agree that these observed exceedances indicate that the wildlife habitat use is impaired. Accordingly, LANL recommends that NMED establish a "preliminary list" for waters that could be listed on the 303(d) list, but for which additional data evaluation/collection is necessary to determine if the use

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is actually impaired. This approach is consistent with recently published recommendations of the National Research Council (NRC) (see attached Appendix A). Reasons to continue evaluating whether the use is impaired include the following:

- Exceedances only occur during storm water events, which are temporary acute events. During the low flow conditions, the chronic condition for which the existing water quality standard was established, uses are fully supported.
- Exceedances are only observed in unfiltered samples suggesting that the selenium source is soil transport during storm events. Given the extensive erosion occurring as a result of the Cerro Grande Fire, elevated selenium concentrations may be an expected result of the impact of the fire.
- BMPs associated with the Laboratory's recently established industrial storm water permit and BMPs implemented as a result of the Cerro Grande Fire have been in place for less than two years (and less than one year in some cases). Time should be allowed to determine if these BMPs are effective.
- Storm water runoff is an acute event; however, the wildlife habitat standards are for chronic exposure. The EPA's benchmark values or levels of concern established in the industrial storm water permit regulations could be used for the purpose of assessment. If the EPA considers the observed selenium and mercury levels on the LANL below the level of concern for storm water events, NMED should consider adopting the same approach.

****RESPONSE:** We agree that we should continue to evaluate new data as it becomes available. NMED has previously reviewed the NRC recommendations and does not believe a "preliminary list" of impaired waters is necessary or practical. As discussed in various responses above, NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Your comments will be taken into consideration during the upcoming revisions of our assessment protocols and the upcoming triennial review. Seasonality concerns, discrimination between natural and anthropogenic sources, etc., are addressed during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.*

COMMENT:

- 3) PCBS. Since the data regarding PCBs is from an analytic method that is noncompliant with NMED regulations, NMED cannot use this data to

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determine water quality for the purpose of preparing the 303(d) list. In addition, the standard for PCBs is a chronic standard, but data is too limited (2 samples in Pueblo Canyon, 1 sample in Los Alamos Canyon) to show an exceedance.

***RESPONSE:** *SWQB has removed the PCB listing from the 2002-2004 303(d) list because the method used is not currently in 40 CFR Part 136. NMAC 20.6.4.13.A has been identified as requiring attention during our next triennial review.*

The United States Environmental Protection Agency (EPA), Office of Water, published Method 1668, Revision A: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by HRGC/HRMS in December 1999 (USEPA 1999).

Section 1.2, page 1 of the Method states: "This Method is for use in data gathering and monitoring associated with the Clean Water Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, and the Safe Drinking Water Act."

Section 1.3, page 2, of the method states: "The detection limits and quantitation levels in this Method are usually dependent on the level of interferences and laboratory background levels rather than instrumental limitations".... "The estimated method detection limit (EMDL) for CB 126 in water is 5 pg/L (picograms-per-liter; parts-per-quadrillion) with no interferences present." In New Mexico storm water samples, average detection limits (average for all congeners detected) in four samples ranged from 3.55 pg/L to 14.93 pg/L.

The Method Detection Limit in water for the 40CFR136 AROCLOR method is 1.0 ug/L or seventy one times the wildlife habitat standard of 0.014 ug/L. The 40CFR136 method is not capable of detecting PCBs at the level of the NM Wildlife Standard. Method 1668A is capable of detecting PCBs up to 2,800 times below the NM Wildlife Standard.

The DOE Oversight Bureau analyzed fish tissue from Cochiti Reservoir for PCBs using the standard AROCLOR methods in 1996. The results in two samples showed levels of PCBs at or just below the detection limit of 100 nanograms-per-gram (parts-per-billion, ppb). The EPA screening level for PCBs in fish tissue is 10 ppb (USEPA 1995) indicating some Cochiti fish samples exceeded the screening level. While the majority of the tissue samples were non-detect, we suspected that due to the high detection limits, other fish samples may have PCBs at levels that exceed the EPA screening level or 10 ppb, but were not quantifiable using the standard AROCLOR methods.

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The World Health Organization (WHO) has identified 12 PCB congeners as "toxic" based on their dioxin-like toxicological response in animals. Method 1668A not only provides an accurate assessment of Total PCB (sum of all congeners) but it also reliably quantifies the 12 dioxin-like PCBs identified by the WHO. The WHO has developed Toxic Equivalency Factors (TEFs) for these 12 PCB congeners and the methodology we use to calculate the Toxic Equivalency Quotient (TEQ) or dioxin-like toxicity due to PCBs. NMED uses Total PCBs (sum of all congeners) and TEQs to evaluate PCB fish tissue concentrations for use in fish advisories.

The DOE Oversight Bureau began using method EPA Method 1668A for determining PCBs in fish tissue in 1999 and 2000. Results from those fish tissue samples from Cochiti and Abiquiu Reservoirs and McAllister Lake (near Las Vegas, NM) have been presented to the WQCC in support of the Human Health standards. In summary, 2 of 5 samples and 6 of 10 samples from Abiquiu and Cochiti Reservoir, respectively, exceed the 10 ppb Total PCB screening level. The dioxin TEQ due to PCBs in 1 of 5 and 5 of 10 samples from Abiquiu and Cochiti reservoirs, respectively, exceed the 0.7 pico-grams-per-gram (pg/g, ppt) screening level for dioxin. The sample from McAllister Lake was below both screening levels.

After the Cero Grande fire the Oversight bureau collected samples of soils, sediments and storm water (LANL only) for PCB analysis using Method 1668A. We sampled sediments found in Cow Creek below the Viveash Fire and compared them to sediments from various LANL canyons below the Cero Grande fire. While PCBs were found in all samples, the congener patterns found in sediments from LANL canyons were very different from those found at Cow Creek, indicating different sources of PCBs. PCBs in Viveash sediments are presumed to be due to worldwide atmospheric deposition and those in LANL canyons most likely are from both atmospheric deposition and local PCB releases. The PCB congeners found in Pueblo Canyon sediments had similar patterns to those found in Pueblo Canyon storm water.

References:

USEPA. 1995. Guidance for assessing chemical contaminant data for use in fish advisories. Volume 1. Fish Sampling and Analysis. Second Edition. September 1995.

USEPA. 1999. Method 1668, Revision A: Chlorinated biphenyl congeners in water, soil, sediment, and tissue by HRGC/HRMS. EPA-821-R-00-002. December 1999.

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- 4) Gross Alpha. As noted above in comments on individual canyons/assessment units, NMED does not have authority to regulate gross alpha regulations from source, special nuclear, or byproduct material, under its own statute and regulations, as well as under controlling federal law. DOE has exclusive regulatory authority over radionuclides at DOE facilities. Accordingly, NMED cannot use its data for gross alpha to determine water quality for purposes of the 303(d) list, since this data includes alpha radiation from these sources.

The Water Quality Act excluded “source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954.” NMSA 1978, § 74-6-2.A (2001)(definition of “water contaminant”). Most of the samples relied on for the impairment designation for gross alpha include materials that are “source, special nuclear or by-product material” and therefore, should not be considered.

Similarly, the definition of “water contaminant” in the applicable standards, 20.6.4.7.YY NMAC excludes “source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954.”

Even though the definition of “water contaminant” in the standards states that the term “may” include “all other radioactive materials, including but not limited to radium and accelerator-produced isotopes,” gross alpha cannot include radioactive materials regulated by DOE under the Atomic Energy Act of 1954 (AEA). While the federal Clean Water Act defines “pollutant” to include “radioactive materials”, 33 U.S.C. §1362(6), that term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of “pollutant”).¹ *See Train v. Colorado Public Int. Research Group*, 426 U.S. 1 (1976); *Waste Action Project v. Dawn Mining Corp.*, 137 F.3d 1426 (9th Cir. 1998). Under the AEA, DOE has had, and continues to have, a unique and comprehensive regulatory role over nuclear safety requirements at all of its facilities, including the Laboratory.²

In addition to authorizing DOE to promulgate rules, orders and directives under the AEA “to govern the possession and use of special nuclear material, source

¹ The regulation provides that “pollutant” includes radioactive materials, except “those regulated under the Atomic Energy Act of 1954, as amended.”

² The Department of Energy Organization Act, 42 U.S.C. § 7101, also grants DOE broad authority to achieve its nuclear safety goal.

³ *See, e.g.*, 10 C.F.R. § 830.4 (“The requirements in this Part must be implemented in a manner that provides reasonable assurance of adequate protection of workers, the public and the environment from adverse consequences, taking into account the work to be performed and the associated hazards.”); 10 C.F.R. § 820 App. A(d) (discussing importance of enforcement of nuclear safety provisions “in order to protect human health and the environment”).

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material, and byproduct material,” 42 U.S.C. § 2201(b), Congress mandated that DOE prescribe those regulations it deems necessary to govern any activity authorized pursuant to the AEA for the protection of health and the minimization of danger to life or property, 42 U.S.C. § 2201(i).

Following Congress’ broad mandate, DOE promulgated extensive nuclear safety requirements (regulations and orders) governing all radioactive materials generated at its facilities, including high-level waste, transuranic waste, low-level waste, accelerator-produced waste, naturally occurring radioactive material, the radioactive component of mixed waste, high-and low-level TSCA-regulated waste, and byproduct material. These nuclear safety standards apply to the Laboratory. DOE’s commitment to managing the environment,³ health and safety risks posed by its nuclear activities underscores each DOE nuclear safety requirement. *See, e.g.*, DOE “Statement of Regulatory and Deregulatory Priorities,” 66 Fed. Reg. 61160, 61160 (Dec. 3, 2001); 64 Fed. Reg. 63925, 63925 (Nov. 22, 1999); 63 Fed. Reg. 61237, 61237 (Nov. 9, 1998).

The radioactive materials included in the gross alpha samples used by the NMED staff include materials regulated by DOE under the AEA. Therefore, those samples cannot be used as a basis for determining non-compliance with the gross alpha standard.

****RESPONSE:** As the comment states, the federal Clean Water Act defines “pollutant” to include “radioactive materials”, 33 U.S.C. §1362(6), and the Code of Federal Regulations then provides an exception that the term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of “pollutant”). Recognizing this exception, the state Water Quality Act and water quality standards include the exception that “water contaminant” does not include “source, special nuclear or by-product material.” Except for those specified materials, however, radioactive materials are “water contaminants” subject to the Clean Water Act and the Water Quality Act.*

The gross alpha data was corrected in the following two ways. First, U-238, U-234, and U-235-236 was subtracted from the reported gross alpha result. Second, this value was further corrected by subtracting all known AEA alpha emitters when there were available data. There were data available on Plutonium-238, Plutonium-239/240, and Americium-241 for the majority of data used in the assessment. These AEA radionuclides we found data on account for an average of 3.3% of the total gross alpha.

Analyses have determined that the listed waters contain corrected gross alpha levels exceeding the applicable criterion, that are not attributable to “source, special nuclear or by-product material,” and are thus presumptively water contaminants. The source(s) of the non-AEA regulated material is not identified.

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The comment proposes, without evidence, a presumption that both the AEA regulated and non-AEA regulated materials have a common source and that no further investigation is necessary. Such a presumption ignores the possibility that some separate sources of non-AEA material may exist.

Furthermore, DOE Order 5400.5, "Radiation Protection of the Public and the environment" (DOE 1990, revised 1-7-93) lists the Derived Concentration Guideline (DCG) for Plutonium-239/240 as 30 pCi/L. Three of the four samples from Pueblo Canyon in 2001 exceed this value (40.6, 49.9, & 85.3 pCi/L). These samples are time-weighted composites and, therefore, likely underestimate the "first flush" concentrations. DOE Oversight Bureau grab samples collected during the same event (LANL data - 85.3 pCi/L Pu-239/240) showed up to 253 pCi/L (Pu-239/240) discharged from Pueblo Canyon. One hour later, the value was 100 pCi/L. To date, DOE has initiated no actions or studies to determine appropriate measures to reduce these discharges to below DOE's DCGs.

Listing of streams for the presence of contaminants was not at issue in either court case cited in the comment. In the case of Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426 (9th Cir. 1998), cited in the comment, the issue involved authority over permitting and enforcement. In that case the court even acknowledged that the lack of authority to enforce standards did not prevent EPA from promulgating them.

... the UMTRCA granted the EPA authority to promulgate standards of general application for the protection of the public health, safety, and the environment from hazards associated with the possession, transfer, and disposal of byproduct materials as defined in section 11(e)(2). 42 U.S.C. S 2022(b). The EPA was not given authority to enforce any standards they set, however.

The listing of streams for the presence of contaminants, like the promulgation of standards, is not of itself an enforcement matter. The listing informs the public that a standard has been exceeded and opens a process to determine the sources. If, after identification of the sources, enforcement is necessary the duty for enforcement will fall to whatever agency has the authority.

- 5) NMED has proposed in the draft 303(d) list that TMDLs do not have to be completed on LANL waters until 2017. Given the low priority in the schedule for action on the proposed listings, the use of a preliminary list will have little procedural impact. The Laboratory believes that the issue of whether or not there is use impairment should be resolved prior to 303(d) listing. While on the preliminary list, studies and sampling can continue to determine if the beneficial uses of waters on the LANL are actually impaired. The Laboratory will work cooperatively with NMED during this process.

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***RESPONSE:** *SWQB performs intensive watershed surveys on a five to seven year rotational basis. Once all data is received, QA/QC'd, and assessed, SWQB attempts to complete non-consent decree TMDLs on the same watershed basis within three years. Non-consent decree scheduling is tentative because it is dependent on financial and staff resources. Watersheds in the Los Alamos area were surveyed as part of the Upper Rio Grande Parts 2 and 3 surveys that were completed 2001. Assessments on all the SWQB data are not yet complete. TMDL development on the Pajarito Plateau listings may begin in 2005.*

We agree that we should continue to evaluate new data as it becomes available. NMED has previously reviewed the NRC recommendations and does not believe a "preliminary list" of impaired waters is necessary or practical. NMED also does not have the financial and/or staff resources to conduct additional sampling and studies outside of our rotating 5-7 year watershed intensive survey schedule. Even so, we welcome LANL's desire to continue studies and sampling and will assist in additional sampling efforts as circumstances allow. As discussed in various responses above, NMED determines impairment and lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Your comments will be taken into consideration during the upcoming revisions of our assessment protocols and the upcoming triennial review. Incorporation of seasonal variation, discrimination between natural and anthropogenic sources, etc., are addressed during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.

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SPECIFIC COMMENTS-CANYONS NOT LOCATED ON LANL PROPERTY

Guaje Canyon

COMMENT:

- 1) “Total Recoverable Selenium (Not Supporting)”:

The listing for Total Recoverable Selenium (TRS) should be removed for the following reasons.

New Mexico Environment Department (NMED) staff listed this assessment unit for Total Recoverable Selenium (TRS) based on data produced by the Laboratory’s Environmental Surveillance Program. Pursuant to the NMED’s Department of Energy-Oversight Bureau (DOE-OB) personnel, and review of the database of the Laboratory’s Risk Reduction – Water Quality and Hydrology Group (RRES-WQH), the data indicate that the levels of TRS from sampling stations upgradient of the Laboratory (i.e., west of the Laboratory) are roughly equivalent to the levels of TRS measured on the Laboratory or near its eastern boundary. This indicates that the TRS levels are from natural, not anthropogenic causes.

The TRS standard is listed under 20.6.4.900.L NMAC, “Wildlife Habitat.” These standards are “chronic.” 20.6.4.11.B NMAC states in part: “Compliance with chronic water quality standards shall be determined from the arithmetic mean of the analytical results of samples collected using applicable protocols. Chronic standards shall not be exceeded more than once every three years.”

In this case, LANL staff collected Laboratory collected three samples for selenium from this assessment unit in 2001. To determine whether the applicable standard was violated, these three samples must be averaged producing an arithmetic mean. Based on this limited data provided by NMED, the arithmetic mean is exceeded the standard for one arithmetic mean value. Therefore selenium should not be listed as “Non Support,” but as “Full Support, Impacts Observed” since there is only one exceedance. Moreover, the sampling data are the result of stormwater runoff which is an acute rather than chronic event.

In addition, the standards suggest that there are situations where the direct applicability of existing water quality standards is questionable. Certainly, the applicability of chronic water quality standards directly to stormwater is a clear example of where one may question the direct applicability of existing water quality standards.

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In 2000, the Cerro Grande Fire within the contributing watershed resulted in debris flows, increased erosion, and sedimentation. Physical and chemical changes resulted in this canyon. Best Management Practices (BMPs) have been implemented by both land management agencies and the Laboratory to control erosion resulting from the fire. The Laboratory believes that insufficient time has passed for these BMPs to become fully effective in reducing and controlling storm water flows and thus in reducing and controlling the concentrations of pollutants in storm runoff water. By the time the 303(d) list is revised in 2004, we expect significant reductions of concentrations of pollutants in storm water.

20.6.4.9 C NMAC states in part: "It is also recognized that contributions of water contaminants by diffuse nonpoint sources of water pollution may make attainment of certain standards difficult. Revision of these standards may be required as new information is obtained on nonpoint sources and other problems unique to semi-arid regions." This statement is particularly true when the water contaminant, as with selenium, is from natural sources.

***RESPONSE:** *Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.*

In the past, SWQB incorporated seasonal, multiple-day sampling runs into our sampling scheme in order to calculate arithmetic mean for toxicant data with chronic criteria. The original language in NMAC 20.6.4.11.B was consistent with that sampling scheme. EPA maintains that chronic criteria should be met in a waterbody that fully supports its uses. Few States and Tribes, if any, are obtaining composite data over a 4-day sampling period for comparison to chronic criteria due primarily to budgetary and staff time constraints. EPA believes that 4-day composites are not an absolute requirement for evaluating whether chronic criteria are being met while determining use attainment status. EPA affords states the flexibility to define how they will assess use attainment with chronic criterion when 4-day composites are not available (USEPA 1997). In response to EPA's position, statistical concerns, and a desire to characterize water quality over a larger portion of the hydrograph, SWQB changed sampling schemes. We now sample once monthly from approximately March to October. Accordingly, we added the following footnote to our assessment protocols: "The chronic criteria shall be applied to the arithmetic mean of the analytical results of samples collected using applicable protocols. (206.4.11.B NMAC). The chronic screening level is 1.5 times the chronic criteria and

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shall be applied to grab samples.” The multiplier of 1.5 was also derived as a means to evaluate small data sets (USEPA 1991). This protocol is NMED’s interpretation of NMAC 20.6.4.11.B in light of our change in sampling scheme. NMAC 20.6.4.11.B has been identified as requiring attention during our next triennial review.

References cited:

USEPA. 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001. Washington, D.C. 300 pp.

USEPA. 1997. Guidelines for preparation of comprehensive state water quality assessments (305(b) reports) and electronic updates). Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

NMED recognizes the numerous BMP programs that have been implemented as part of the Laboratory’s SWPPP to implement its storm water general permit. We also understand that it takes time to determine if BMPs are effective. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. When subsequent data indicates that criteria for associated designated uses are not being exceeded for a particular assessment unit, we will remove it from the 303(d) list. We do not speculate when this will occur.

COMMENT:

2) “Gross Alpha (Not Supporting)”:

NMED staff listed this assessment unit based on information from the Laboratory’s Environmental Surveillance Program. However, LANL’s data cannot be used directly to establish violations of stream standards for gross alpha, for the following reasons. The gross alpha standard includes radium 226, but excludes radon and uranium (20.6.4.900.K NMAC). Additionally, the standard excludes radiation from source, special nuclear, and by-product material, because these substances are excluded from the definition of “water contaminant” both by the regulation (20.6.4.6.6.YY. NMAC) and by the New Mexico Water Quality Act, 74-6-2.A NMSA. NMED does not regulate source, special nuclear, or byproduct materials or alpha radiation from them. As discussed below, regulation of these materials and their radiation for public health and safety purposes is exclusively with the United States Department of Energy (DOE) for DOE facilities, and the Nuclear Regulatory Commission.

Gross alpha cannot include radioactive materials regulated by DOE under the Atomic Energy Act of 1954 (AEA). Even though the Clean Water Act defines “pollutant” to include “radioactive materials”, 33 U.S.C. §1362(6), that term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of

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“pollutant”).¹ See *Train v. Colorado Public Int. Research Group*, 426 U.S. 1 (1976); *Waste Action Project v. Dawn Mining Corp.*, 137 F.3d 1426 (9th Cir. 1998). Under the AEA, DOE has had, and continues to have, a unique and comprehensive regulatory role over nuclear safety requirements at all of its facilities, including the Laboratory.²

In addition to authorizing DOE to promulgate rules, orders and directives under the AEA “to govern the possession and use of special nuclear material, source material, and byproduct material,” 42 U.S.C. § 2201(b), Congress mandated that DOE prescribe those regulations it deems necessary to govern any activity authorized pursuant to the AEA for the protection of health and the minimization of danger to life or property, 42 U.S.C. § 2201(i).

Following Congress’ broad mandate, DOE promulgated extensive nuclear safety requirements (regulations and orders) governing all radioactive materials generated at its facilities, including high-level waste, transuranic waste, low-level waste, accelerator-produced waste, naturally occurring radioactive material, the radioactive component of mixed waste, high-and low-level TSCA-regulated waste, and byproduct material. These nuclear safety standards apply to the Laboratory. DOE’s commitment to managing the environment,³ health and safety risks posed by its nuclear activities underscores each DOE nuclear safety requirement. See, e.g., DOE “Statement of Regulatory and Deregulatory Priorities,” 66 Fed. Reg. 61160, 61160 (Dec. 3, 2001); 64 Fed. Reg. 63925, 63925 (Nov. 22, 1999); 63 Fed. Reg. 61237, 61237 (Nov. 9, 1998).

The radioactive materials included in the gross alpha samples used by the NMED staff include materials regulated exclusively by DOE under the AEA. Therefore, those samples cannot be used as a basis for determining non-compliance with the gross alpha standard.

In addition, the Record of Decision (ROD) is incomplete and does not support this listing.

¹ The regulation provides that “pollutant” includes radioactive materials, except “those regulated under the Atomic Energy Act of 1954, as amended.”

² The Department of Energy Organization Act, 42 U.S.C. § 7101, also grants DOE broad authority to achieve its nuclear safety goal.

³ See, e.g., 10 C.F.R. § 830.4 (“The requirements in this Part must be implemented in a manner that provides reasonable assurance of adequate protection of workers, the public and the environment from adverse consequences, taking into account the work to be performed and the associated hazards.”); 10 C.F.R. § 820 App. A(d) (discussing importance of enforcement of nuclear safety provisions “in order to protect human health and the environment”).

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***RESPONSE:** *As the comment states, the federal Clean Water Act defines "pollutant" to include "radioactive materials", 33 U.S.C. §1362(6), and the Code of Federal Regulations then provides an exception that the term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of "pollutant"). Recognizing this exception, the state Water Quality Act and water quality standards include the exception that "water contaminant" does not include "source, special nuclear or by-product material." Except for those specified materials, however, radioactive materials are "water contaminants" subject to the Clean Water Act and the Water Quality Act.*

The gross alpha data was corrected in the following two ways. First, U-238, U-234, and U-235-236 was subtracted from the reported gross alpha result. Second, this value was further corrected by subtracting all known AEA alpha emitters when there were available data. There were data available on Plutonium-238, Plutonium-239/240, and Americium-241 for the majority of data used in the assessment. These AEA radionuclides we found data on account for an average of 3.3% of the total gross alpha.

Analyses have determined that the listed waters contain corrected gross alpha levels exceeding the applicable criterion, that are not attributable to "source, special nuclear or by-product material," and are thus presumptively water contaminants. The source(s) of the non-AEA regulated material is not identified. The comment proposes, without evidence, a presumption that both the AEA regulated and non-AEA regulated materials have a common source and that no further investigation is necessary. Such a presumption ignores the possibility that some separate sources of non-AEA material may exist.

Furthermore, DOE Order 5400.5, "Radiation Protection of the Public and the environment" (DOE 1990, revised 1-7-93) lists the Derived Concentration Guideline (DCG) for Plutonium-239/240 as 30 pCi/L. Three of the four samples from Pueblo Canyon in 2001 exceed this value (40.6, 49.9, & 85.3 pCi/L). These samples are time-weighted composites and, therefore, likely underestimate the "first flush" concentrations. DOE Oversight Bureau grab samples collected during the same event (LANL data - 85.3 pCi/L Pu-239/240) showed up to 253 pCi/L (Pu-239/240) discharged from Pueblo Canyon. One hour later, the value was 100 pCi/L. To date, DOE has initiated no actions or studies to determine appropriate measures to reduce these discharges to below DOE's DCGs.

Listing of streams for the presence of contaminants was not at issue in either court case cited in the comment. In the case of Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426 (9th Cir. 1998), cited in the comment, the issue involved authority over permitting and enforcement. In that case the court even acknowledged that the lack of authority to enforce standards did not prevent EPA from promulgating them.

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... the UMTRCA granted the EPA authority to promulgate standards of general application for the protection of the public health, safety, and the environment from hazards associated with the possession, transfer, and disposal of byproduct materials as defined in section 11(e)(2). 42 U.S.C. S 2022(b). The EPA was not given authority to enforce any standards they set, however.

The listing of streams for the presence of contaminants, like the promulgation of standards, is not of itself an enforcement matter. The listing informs the public that a standard has been exceeded and opens a process to determine the sources. If, after identification of the sources, enforcement is necessary the duty for enforcement will fall to whatever agency has the authority.

*The entry in the ROD was augmented to read as follows: **Gross Alpha was listed as Non Support** because the Livestock Watering criterion of 15 pCi/L was exceeded four times in time-weighted composite samples in 2001. The uranium-corrected gross alpha minus plutonium and americium exceedances were as follows (pCi/L): 481.73, 194.27, 464.26, and 441.02.*

COMMENT:

3) Attainment Status and Probable Sources of Impairment:

As noted, in 2000, the Cerro Grande Fire within the contributing watershed resulted in debris flows, increased erosion and sedimentation. Physical and chemical changes resulted in this canyon. BMPs have been implemented by both land management agencies and the Laboratory to control erosion resulting from the fire. The Laboratory believes that insufficient time has passed for these BMPs to become fully effective in reducing and controlling storm water flows and thus in reducing and controlling the concentrations of pollutants in storm runoff water. By the time the 303(d) list is revised in 2004, we expect significant reductions of concentrations of pollutants in storm water.

The draft listing should be corrected to remove the Probable Cause of Impairment and Probable Sources of Impairment for gross alpha, since there are no adequate supporting data for this listing. The "Impaired Designated Use" for Livestock Watering should be removed, since that is where the gross alpha standard appears. There is no gross alpha standard for Wildlife Habitat.

Probable sources of impairment should identify "Natural Sources" as the major source of selenium; also "Watershed runoff following forest fire" as NMED has done with the Los Alamos Reservoir. This section should not include "Urban Runoff/Storm Sewers" or "Land Disposal" because these features did not and do not exist in Guaje Canyon. Six industrial point sources are present in this canyon from domestic wells operated by the Los Alamos County. These point source

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discharges were historically permitted under the Laboratory's NPDES Permit (04A171, 04A172, 04A173, 04A174, 04A175, and 04A177). Discharges from these wells are intermittent and not likely to be a major source of selenium or gross alpha. Drinking water data is available for review in the Laboratory's annual Environmental Surveillance report. Discharge Monitoring Reports have been previously provided to NMED-SWQB and EPA. There is presently no active manmade source of "Erosion and Sedimentation."

****RESPONSE:** NMED recognizes the numerous BMP programs that have been implemented as part of the Laboratory's SWPPP to implement its storm water general permit. We also understand that it takes time to determine if BMPs are effective. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. When subsequent data indicates that criteria for associated designated uses are not being exceeded for a particular assessment unit, we will remove it from the 303(d) list. We do not speculate when this will occur.*

The 303(d) list is electronically generated through a series of custom queries and reports from the MS Access SWQB database that we developed and populated. We combine this database with the Assessment Database (ADB) Version 1 front-end that was developed by EPA. Unfortunately, ADB has limitations, one of which is that the canned reports in the ADB database front-end are extremely inadequate for relaying information to the public. We have developed a custom report but are still constrained limitations inherent to MS Access reporting functionalities. In the database, selenium impairments are linked to Wildlife Habitat uses and gross alpha impairments are linked to Livestock Watering uses. EPA requires that individual causes are linked to their associated designated uses during electronic reporting. NMED's believes the report format is adequate as it is because: 1) the links are contained in the electronic submittal to EPA, 2) the Water Quality Standards clearly indicate which criteria are associated with each specific designated use, and 3) the suggested format would be awkward in situations where there was greater than a one-to-one relationship between a Probable Cause and Impaired Designated Uses. For example, dissolved aluminum concentrations greater than 5.0 mg/L could lead to impairment of both Irrigation and Aquatic Life designated uses. ADB Version 2 has recently been released with an Oracle back end. We hope the new version will resolve many of the report format limitations we have experienced with Version 1.

Probable Source code 8080 -- Watershed runoff following forest fire -- was added to all listings in the Cerro Grande fire area. Land disposal and Urban Runoff were removed as

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Probable Sources. Erosion and Sedimentation remain because it does not imply manmade or not.

COMMENT:

4) Stream Reach:

Stream Reach should be listed as State Road 502 to headwaters of Guaje Canyon. No data was provided for the reach downstream of State Road 502. A portion of Guaje Canyon is on Pueblo land.

****RESPONSE:** The tribal portion of Guaje Canyon is noted in the assessment unit definition: Guaje Canyon (San Ildefonso bnd to headwaters). Assessment unit are defined in hydrologic terms whenever possible (i.e., from one hydrologic feature to another).*

COMMENT:

5) Designated Use:

Guaje Canyon is an unclassified ephemeral reach. The only uses that are traditionally assessed are Wildlife Habitat and Livestock Watering, although livestock are not known to water in this assessment unit. The designated use impairment for Wildlife Habitat, which includes selenium, should be removed because only one exceedance (using the mean value) has been shown for this chronic standard. The "Impaired Designated Use" for Livestock Watering, which includes gross alpha, should be removed because the data do not show any exceedance of this standard.

****RESPONSE:** Disagree. See above response to these concerns.*

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Pueblo Canyon (Los Alamos Canyon to headwaters)

COMMENT:

1) “PCBs (Partial Support)”:

This listing should be removed because the data used to support the listing of this assessment unit were obtained by analyzing water samples using an analytic method known as the congener method (Method 1668A), which has not been approved by the federal EPA under 40 CFR 136. Therefore, these data cannot be used to determine compliance with the standards.

20.6.4.13 NMAC states in part: “All methods of sample collection, preservation and analysis used in determining water quality and maintenance of these standards shall be in accordance with approved or accepted test procedures published in “Guidelines establish test procedures for the analysis of pollutants under the Clean Water Act,” 40 CFR 136”

The data relating to concentrations of PCBs, which are the basis for listing this assessment unit for PCBs, were obtained by analyzing water samples using an analytic method known as the congener method (Method 1668A). The federal EPA has not approved this method under 40 CFR 136. Therefore, these data were not obtained by a method of sample analysis that is compliant with the NMAC. 20.6.4.13. NMAC requires all samples, without exception, that are used for determining water quality or maintaining water quality standards to be in accordance with these approved test procedures.

It should be noted that the Laboratory initiated a study in cooperation with NMED-SWQB, Los Alamos County, and Pueblos to accurately determine the concentrations of PCBs in water, sediments, soils, and fish in the Cochiti Reservoir watershed. Research into PCB contamination showed that PCBs are ubiquitous in the environment due to widespread use and airborne distribution. In addition, NMED did not collect sufficient samples to state with confidence whether the standard for PCBs was exceeded. The PCB standard is listed under 20.6.4.900.L NMAC, “Wildlife Habitat.” These standards are “chronic.” 20.6.4.11.B NMAC states in part: “Compliance with chronic water quality standards shall be determined from the arithmetic mean of the analytical results of samples collected using applicable protocols. Chronic standards shall not be exceeded more than once every three years.”

NMED’s oral testimony during the May 2002 public hearing regarding compliance with human health standards (includes PCBs) states (page 89-90): “For the decision regarding attainment, NMED requires a minimum of seven sample results.” Additionally, NMED testified during cross-examination that:

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“Because of uncertainty associated with any analytical result, it is not ‘prudent’ to rely on a single number,” so they sample “multiple times to achieve a level of confidence.”

NMED collected two PCB samples in 2000 from two different locations within the reach using an unapproved method. These two samples should be averaged producing an arithmetic mean. Based on this limited information, PCBs should not be listed. In addition to being analyzed by a method that is not compliant with NMED regulations, the number of samples (2) is less than the number that NMED publicly stated was required for appropriate confidence in the data. Even if two samples were enough, the chronic standards require that they be averaged, producing at best one exceedance and an evaluation of “Full Support, Impacts Observed.”

***RESPONSE:** *SWQB has removed the PCB listing from the 2002-2004 303(d) list because the method used is not currently in 40 CFR Part 136. NMAC 20.6.4.13.A has been identified as requiring attention during our next triennial review.*

The United States Environmental Protection Agency (EPA), Office of Water, published Method 1668, Revision A: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by HRGC/HRMS in December 1999 (USEPA 1999).

Section 1.2, page 1 of the Method states: “This Method is for use in data gathering and monitoring associated with the Clean Water Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, and the Safe Drinking Water Act.”

Section 1.3, page 2, of the method states: “The detection limits and quantitation levels in this Method are usually dependent on the level of interferences and laboratory background levels rather than instrumental limitations”.... “The estimated method detection limit (EMDL) for CB 126 in water is 5 pg/L (picograms-per-liter; parts-per-quadrillion) with no interferences present.” In New Mexico storm water samples, average detection limits (average for all congeners detected) in four samples ranged from 3.55 pg/L to 14.93 pg/L.

The Method Detection Limit in water for the 40CFR136 AROCLOR method is 1.0 ug/L or seventy one times the wildlife habitat standard of 0.014 ug/L. The 40CFR136 method is not capable of detecting PCBs at the level of the NM Wildlife Standard. Method 1668A is capable of detecting PCBs up to 2,800 times below the NM Wildlife Standard.

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The DOE Oversight Bureau analyzed fish tissue from Cochiti Reservoir for PCBs using the standard AROCLOR methods in 1996. The results in two samples showed levels of PCBs at or just below the detection limit of 100 nanograms-per-gram (parts-per-billion, ppb). The EPA screening level for PCBs in fish tissue is 10 ppb (USEPA 1995) indicating some Cochiti fish samples exceeded the screening level. While the majority of the tissue samples were non-detect, we suspected that due to the high detection limits, other fish samples may have PCBs at levels that exceed the EPA screening level or 10 ppb, but were not quantifiable using the standard AROCLOR methods.

The World Health Organization (WHO) has identified 12 PCB congeners as "toxic" based on their dioxin-like toxicological response in animals. Method 1668A not only provides an accurate assessment of Total PCB (sum of all congeners) but it also reliably quantifies the 12 dioxin-like PCBs identified by the WHO. The WHO has developed Toxic Equivalency Factors (TEFs) for these 12 PCB congeners and the methodology we use to calculate the Toxic Equivalency Quotient (TEQ) or dioxin-like toxicity due to PCBs. NMED uses Total PCBs (sum of all congeners) and TEQs to evaluate PCB fish tissue concentrations for use in fish advisories.

The DOE Oversight Bureau began using method EPA Method 1668A for determining PCBs in fish tissue in 1999 and 2000. Results from those fish tissue samples from Cochiti and Abiquiu Reservoirs and McAllister Lake (near Las Vegas, NM) have been presented to the WQCC in support of the Human Health standards. In summary, 2 of 5 samples and 6 of 10 samples from Abiquiu and Cochiti Reservoir, respectively, exceed the 10 ppb Total PCB screening level. The dioxin TEQ due to PCBs in 1 of 5 and 5 of 10 samples from Abiquiu and Cochiti reservoirs, respectively, exceed the 0.7 pico-grams-per-gram (pg/g, ppt) screening level for dioxin. The sample from McAllister Lake was below both screening levels.

After the Cero Grande fire the Oversight bureau collected samples of soils, sediments and storm water (LANL only) for PCB analysis using Method 1668A. We sampled sediments found in Cow Creek below the Viveash Fire and compared them to sediments from various LANL canyons below the Cero Grande fire. While PCBs were found in all samples, the congener patterns found in sediments from LANL canyons were very different from those found at Cow Creek, indicating different sources of PCBs. PCBs in Viveash sediments are presumed to be due to worldwide atmospheric deposition and those in LANL canyons most likely are from both atmospheric deposition and local PCB releases. The PCB congeners found in Pueblo Canyon sediments had similar patterns to those found in Pueblo Canyon storm water.

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References:

USEPA. 1995. *Guidance for assessing chemical contaminant data for use in fish advisories. Volume 1. Fish Sampling and Analysis. Second Edition. September 1995.*

USEPA. 1999. *Method 1668, Revision A: Chlorinated biphenyl congeners in water, soil, sediment, and tissue by HRGC/HRMS. EPA-821-R-00-002. December 1999.*

During the summer of 2002, the cooperative PCB study intends to collect water samples for PCB congener analysis from five LANL canyons and the Rio Grande upstream and downstream from the Rio Grande. In addition, semi-permeable membrane devices are deployed in Sandia Canyon and two stations in the Rio Grande (upstream & downstream from LANL). These devices will show if PCBs are biologically available for uptake into aquatic organisms at these locations

The May 2002 testimony regarding how NMED makes attainment decisions was an incomplete statement of the assessment process. NMED SWQB does not have a minimum data requirement of seven samples for assessment purposes. The following statement is from NMED's Procedures for Assessing Standards Attainment for the 303(d) List and 305(b) Report: "A minimum of seven samples is necessary to make assessments based on percentages. If fewer than seven samples are analyzed, no criteria exceedances shall be assessed as Full Support, one exceedance shall be assessed as Full Support, Impact Observed and more than one exceedance shall be assessed as Not Supported." This statement is a footnote on Tables 3 and 7 which detail the criteria for assessment of Aquatic Life Use Support Using Chemical/Physical Data and Assessment of Primary and Secondary Contact Use Support, respectively. This footnote is not noted on Tables 9 and 10 which detail the criteria for assessment of Livestock Watering Use Support and Wildlife Habitat Use Support, respectively. Even so, this footnote is consistent with the criteria for assessment detailed on tables 9 and 10:

Full Support - No exceedance for any one parameter within five years

Full Support, Impacts Observed - One exceedance for any one parameter within five years

Partial Support - Two exceedences for any one parameter within five years

Not Supported - Two or more exceedences for any one parameter within five years

References cited:

USEPA. 1997. *Guidelines for preparation of comprehensive state water quality assessments (305(b) reports) and electronic updates). Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.*

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USEPA. 2002. Consolidated Assessment and Listing Methodology (CALM) – Toward a Compendium of Best Practices. Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

In the past, SWQB incorporated seasonal, multiple-day sampling runs into our sampling scheme in order to calculate arithmetic mean for toxicant data with chronic criteria. The original language in NMAC 20.6.4.11.B was consistent with that sampling scheme. EPA maintains that chronic criteria should be met in a waterbody that fully supports its uses. Few States and Tribes, if any, are obtaining composite data over a 4-day sampling period for comparison to chronic criteria due primarily to budgetary and staff time constraints. EPA believes that 4-day composites are not an absolute requirement for evaluating whether chronic criteria are being met while determining use attainment status. EPA affords states the flexibility to define how they will assess use attainment with chronic criterion when 4-day composites are not available (USEPA 1997). In response to EPA's position, statistical concerns, and a desire to characterize water quality over a larger portion of the hydrograph, SWQB changed sampling schemes. We now sample once monthly from approximately March to October. Accordingly, we added the following footnote to our assessment protocols: "The chronic criteria shall be applied to the arithmetic mean of the analytical results of samples collected using applicable protocols. (206.4.11.B NMAC). The chronic screening level is 1.5 times the chronic criteria and shall be applied to grab samples." The multiplier of 1.5 was also derived as a means to evaluate small data sets (USEPA 1991). This protocol is NMED's interpretation of NMAC 20.6.4.11.B in light of our change in sampling scheme. NMAC 20.6.4.11.B has been identified as requiring attention during our next triennial review.

References cited:

USEPA. 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001. Washington, D.C. 300 pp.

USEPA. 1997. Guidelines for preparation of comprehensive state water quality assessments (305(b) reports) and electronic updates). Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

COMMENT:

2) "Gross Alpha (Not Supporting)":

NMED staff listed this assessment unit based on information from the Laboratory's Environmental Surveillance Program. Laboratory data cannot be used directly to establish violations of stream standards for gross alpha, for the following reasons. The gross alpha standard includes radium 226, but excludes

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radon and uranium (20.6.4.900.K NMAC). Additionally, the standard excludes radiation from source, special nuclear, and by-product material, because these substances are excluded from the definition of “water contaminant” both by the regulation (20.6.4.6.6.YY. NMAC) and by the New Mexico Water Quality Act, 74-6-2.A NMSA. NMED does not regulate source, special nuclear, or byproduct materials or alpha radiation from them. As discussed below, regulation of these materials and their radiation for public health and safety purposes is exclusively with the United States Department of Energy and the Nuclear Regulatory Commission.

Gross alpha cannot include radioactive materials regulated by DOE under the Atomic Energy Act of 1954 (AEA). Even though the Clean Water Act defines “pollutant” to include “radioactive materials”, 33 U.S.C. §1362(6), that term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of “pollutant”).¹ See *Train v. Colorado Public Int. Research Group*, 426 U.S. 1 (1976); *Waste Action Project v. Dawn Mining Corp.*, 137 F.3d 1426 (9th Cir. 1998). Under the AEA, DOE has had, and continues to have, a unique and comprehensive regulatory role over nuclear safety requirements at all of its facilities, including the Laboratory.²

In addition to authorizing DOE to promulgate rules, orders and directives under the AEA “to govern the possession and use of special nuclear material, source material, and byproduct material,” 42 U.S.C. § 2201(b), Congress mandated that DOE prescribe those regulations it deems necessary to govern any activity authorized pursuant to the AEA for the protection of health and the minimization of danger to life or property, 42 U.S.C. § 2201(i).

Following Congress’ broad mandate, DOE promulgated extensive nuclear safety requirements (regulations and orders) governing all radioactive materials generated at its facilities, including high-level waste, transuranic waste, low-level waste, accelerator-produced waste, naturally occurring radioactive material, the radioactive component of mixed waste, high-and low-level TSCA-regulated waste, and byproduct material. These nuclear safety standards apply to the Laboratory. DOE’s commitment to managing the environment,³ health and safety

¹ The regulation provides that “pollutant” includes radioactive materials, except “those regulated under the Atomic Energy Act of 1954, as amended.”

² The Department of Energy Organization Act, 42 U.S.C. § 7101, also grants DOE broad authority to achieve its nuclear safety goal.

³ See, e.g., 10 C.F.R. § 830.4 (“The requirements in this Part must be implemented in a manner that provides reasonable assurance of adequate protection of workers, the public and the environment from adverse consequences, taking into account the work to be performed and the associated hazards.”); 10 C.F.R. § 820 App. A(d) (discussing importance of enforcement of nuclear safety provisions “in order to protect human health and the environment”).

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risks posed by its nuclear activities underscores each DOE nuclear safety requirement. *See, e.g.*, DOE "Statement of Regulatory and Deregulatory Priorities," 66 Fed. Reg. 61160, 61160 (Dec. 3, 2001); 64 Fed. Reg. 63925, 63925 (Nov. 22, 1999); 63 Fed. Reg. 61237, 61237 (Nov. 9, 1998).

The radioactive materials included in the gross alpha samples used by the NMED staff include materials regulated by DOE under the AEA. Therefore, those samples cannot be used as a basis for determining non-compliance with the gross alpha standard.

RESPONSE: *As the comment states, the federal Clean Water Act defines "pollutant" to include "radioactive materials", 33 U.S.C. §1362(6), and the Code of Federal Regulations then provides an exception that the term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of "pollutant"). Recognizing this exception, the state Water Quality Act and water quality standards include the exception that "water contaminant" does not include "source, special nuclear or by-product material." Except for those specified materials, however, radioactive materials are "water contaminants" subject to the Clean Water Act and the Water Quality Act.*

The gross alpha data was corrected in the following two ways. First, U-238, U-234, and U-235-236 was subtracted from the reported gross alpha result. Second, this value was further corrected by subtracting all known AEA alpha emitters when there were available data. There were data available on Plutonium-238, Plutonium-239/240, and Americium-241 for the majority of data used in the assessment. These AEA radionuclides we found data on account for an average of 3.3% of the total gross alpha.

Analyses have determined that the listed waters contain corrected gross alpha levels exceeding the applicable criterion, that are not attributable to "source, special nuclear or by-product material," and are thus presumptively water contaminants. The source(s) of the non-AEA regulated material is not identified. The comment proposes, without evidence, a presumption that both the AEA regulated and non-AEA regulated materials have a common source and that no further investigation is necessary. Such a presumption ignores the possibility that some separate sources of non-AEA material may exist.

Furthermore, DOE Order 5400.5, "Radiation Protection of the Public and the environment" (DOE 1990, revised 1-7-93) lists the Derived Concentration Guideline (DCG) for Plutonium-239/240 as 30 pCi/L. Three of the four samples from Pueblo Canyon in 2001 exceed this value (40.6, 49.9, & 85.3 pCi/L) These samples are time-weighted composites and, therefore, likely underestimate the "first flush" concentrations. DOE Oversight Bureau grab samples collected during the same event (LANL data - 85.3 pCi/L Pu-239/240) showed up to 253

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pCi/L (Pu-239/240) discharged from Pueblo Canyon. One hour later, the value was 100 pCi/L. To date, DOE has initiated no actions or studies to determine appropriate measures to reduce these discharges to below DOE's DCGs.

Listing of streams for the presence of contaminants was not at issue in either court case cited in the comment. In the case of Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426 (9th Cir. 1998), cited in the comment, the issue involved authority over permitting and enforcement. In that case the court even acknowledged that the lack of authority to enforce standards did not prevent EPA from promulgating them.

... the UMTRCA granted the EPA authority to promulgate standards of general application for the protection of the public health, safety, and the environment from hazards associated with the possession, transfer, and disposal of byproduct materials as defined in section 11(e)(2). 42 U.S.C. S 2022(b). The EPA was not given authority to enforce any standards they set, however.

The listing of streams for the presence of contaminants, like the promulgation of standards, is not of itself an enforcement matter. The listing informs the public that a standard has been exceeded and opens a process to determine the sources. If, after identification of the sources, enforcement is necessary the duty for enforcement will fall to whatever agency has the authority.

COMMENT:

3) Attainment Status and Probable Sources of Impairment:

In 2000, the Cerro Grande fire within the contributing watershed resulted in debris flows, increased erosion and sedimentation. Physical and chemical changes resulted in this canyon. BMPs have been implemented by both land management agencies and the Laboratory to control erosion resulting from the fire. The Laboratory believes that insufficient time has passed for these BMPs to become fully effective in reducing and controlling storm water flows and thus in reducing and controlling the concentrations of pollutants in storm runoff water. By the time the 303(d) list is revised in 2004, we expect significant reductions of concentrations of pollutants in storm water. The "Probable Source of Impairment" for PCBs should be removed for this assessment unit, since the data given are noncompliant with NMED regulations and therefore cannot be used to support the listing. The "Impaired Designated Use" for Livestock Watering for Gross Alpha should also be deleted for this reach, since the data that the Department used are inadequate to support the listing.

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***RESPONSE:** *SWQB has removed the PCB listing from the 2002-2004 303(d) list because the method used is not currently in 40 CFR Part 136. NMAC 20.6.4.13.A has been identified as requiring attention during our next triennial review. Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.*

NMED recognizes the numerous BMP programs that have been implemented as part of the Laboratory's SWPPP to implement its storm water general permit. We also understand that it takes time to determine if BMPs are effective. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. When subsequent data indicates that criteria for associated designated uses are not being exceeded for a particular assessment unit, we will remove it from the 303(d) list. We do not speculate when this will occur.

COMMENT:

4) Stream Reach:

The draft ROD documents the stream reach from Los Alamos Canyon to headwaters. This reach should be described as Los Alamos Canyon at State Road 502 to headwaters of Pueblo Canyon. NMED does not provide data in the draft ROD for the reach below State Road 502 to evaluate/assess use impairment. Pueblo Canyon is an unclassified ephemeral reach. Pueblo Canyon below the Bayo Wastewater Treatment Plant is an effluent dominant stream. This reach is assessed for Livestock Watering and Wildlife Habitat

***RESPONSE:** *Assessment unit are defined in hydrologic terms whenever possible (i.e., from one hydrologic feature to another).*

COMMENT:

5) Designated Use:

The "Impaired Designated Use" for Wildlife Habitat, which contains the PCB standard, should be removed since the supporting data are noncompliant with NMED regulations. The "Impaired Designated Use" for Livestock Watering for Gross Alpha should also be deleted for this reach, since the data that the Department used are inadequate to support the listing.

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****RESPONSE:** Disagree. See above response to these concerns. Also note that selenium was added as a source of impairment as explained in the revised ROD: **Selenium was listed as Non Support** because the Wildlife Habitat chronic screening criterion of 7.5 mg/L (5.0 mg/L x 1.5) was exceeded three times in time-weighted composite samples in 2001. Selenium exceedances were as follows (ug/L): 26.8, 15.1, and 13.1. Los Alamos National Laboratory collected all data used in these assessments during storm events in 2000 and 2001. SWQB has removed the PCB listing from the 2002-2004 303(d) list because the method used is not currently in 40 CFR Part 136. NMAC 20.6.4.13.A has been identified as requiring attention during our next triennial review.*

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Rendija Canyon (Guaie Canyon to headwaters)

COMMENT:

- 1) “Total Recoverable Selenium (Partial Support)”:

NMED staff listed this assessment unit for TRS based on data from only two composite samples produced by the Laboratory’s Environmental Surveillance Program. Pursuant to DOE-OB personnel, and the RRES-WQH’s water quality database, the data indicate that the levels of TRS from sampling stations upgradient of the Laboratory (i.e., west of the Laboratory) are roughly equivalent to the levels of TRS measured on the Laboratory or near its eastern boundary. This suggests that the TRS levels are from natural, not anthropogenic causes. Additionally, the standard for selenium is a chronic standard. The limited data provided by NMED do not support the “Partial Support” evaluation. The two values represent one value for 2000 and one value for 2001. We do not believe the values from two different years should be averaged. Even if it was, it would produce a single exceedance and a “Full Support, Impacts Observed” evaluation. As it is, one value for each year cannot constitute an arithmetic mean, therefore this reach should not be listed for selenium. Moreover, these results are from storm water runoff, an acute event, in contrast to the standard for TRS, a chronic standard. The applicability of chronic standards to acute exposure scenarios is questionable.

****RESPONSE:** Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL’s monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.*

In the past, SWQB incorporated seasonal, multiple-day sampling runs into our sampling scheme in order to calculate arithmetic mean for toxicant data with chronic criteria. The original language in NMAC 20.6.4.11.B was consistent with that sampling scheme. EPA maintains that chronic criteria should be met in a waterbody that fully supports its uses. Few States and Tribes, if any, are obtaining composite data over a 4-day sampling period for comparison to chronic criteria due primarily to budgetary and staff time constraints. EPA believes that 4-day composites are not an absolute requirement for evaluating whether chronic criteria are being met while determining use attainment status. EPA affords states the flexibility to define how they will assess use attainment with chronic

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criterion when 4-day composites are not available (USEPA 1997). In response to EPA's position, statistical concerns, and a desire to characterize water quality over a larger portion of the hydrograph, SWQB changed sampling schemes. We now sample once monthly from approximately March to October. Accordingly, we added the following footnote to our assessment protocols: "The chronic criteria shall be applied to the arithmetic mean of the analytical results of samples collected using applicable protocols. (206.4.11.B NMAC). The chronic screening level is 1.5 times the chronic criteria and shall be applied to grab samples." The multiplier of 1.5 was also derived as a means to evaluate small data sets (USEPA 1991). This protocol is NMED's interpretation of NMAC 20.6.4.11.B in light of our change in sampling scheme. NMAC 20.6.4.11.B has been identified as requiring attention during our next triennial review.

References cited:

USEPA. 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001. Washington, D.C. 300 pp.

USEPA. 1997. Guidelines for preparation of comprehensive state water quality assessments (305(b) reports) and electronic updates). Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

COMMENT:

2) "Gross Alpha (Full Support Impacts Observed)":

NMED staff listed this assessment unit based on information from the Laboratory. However, LANL data cannot be used directly to establish violations of stream standards for gross alpha, for the following reasons. The gross alpha standard includes radium 226, but excludes radon and uranium. 20.6.4.900.K NMAC. Additionally, the standard also excludes radiation from source, special nuclear, and by-product material, because these substances are excluded from the definition of "water contaminant" both by the regulation (20.6.4.6.6.YY. NMAC) and by the New Mexico Water Quality Act, 74-6-2.A NMSA. NMED does not regulate source, special nuclear, or byproduct materials or alpha radiation from them. As discussed below, regulation of these materials and their radiation for public health and safety purposes is exclusively with the United States Department of Energy and the Nuclear Regulatory Commission. Gross alpha cannot include radioactive materials regulated by DOE under the Atomic Energy Act of 1954 (AEA). Even though the Clean Water Act defines "pollutant" to include "radioactive materials", 33 U.S.C. §1362(6), that term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of

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“pollutant”).¹ *See Train v. Colorado Public Int. Research Group*, 426 U.S. 1 (1976); *Waste Action Project v. Dawn Mining Corp.*, 137 F.3d 1426 (9th Cir. 1998). Under the AEA, DOE has had, and continues to have, a unique and comprehensive regulatory role over nuclear safety requirements at all of its facilities, including the Laboratory.²

In addition to authorizing DOE to promulgate rules, orders and directives under the AEA “to govern the possession and use of special nuclear material, source material, and byproduct material,” 42 U.S.C. § 2201(b), Congress mandated that DOE prescribe those regulations it deems necessary to govern any activity authorized pursuant to the AEA for the protection of health and the minimization of danger to life or property, 42 U.S.C. § 2201(i).

Following Congress’ broad mandate, DOE promulgated extensive nuclear safety requirements (regulations and orders) governing all radioactive materials generated at its facilities, including high-level waste, transuranic waste, low-level waste, accelerator-produced waste, naturally occurring radioactive material, the radioactive component of mixed waste, high-and low-level TSCA-regulated waste, and byproduct material. These nuclear safety standards apply to the Laboratory. DOE’s commitment to managing the environment,³ health and safety risks posed by its nuclear activities underscores each DOE nuclear safety requirement. *See, e.g.*, DOE “Statement of Regulatory and Deregulatory Priorities,” 66 Fed. Reg. 61160, 61160 (Dec. 3, 2001); 64 Fed. Reg. 63925, 63925 (Nov. 22, 1999); 63 Fed. Reg. 61237, 61237 (Nov. 9, 1998).

The radioactive materials included in the gross alpha samples used by the NMED staff include materials regulated by DOE under the AEA. Therefore, those samples cannot be used as a basis for determining non-compliance with the gross alpha standard.

***RESPONSE:** *As the comment states, the federal Clean Water Act defines “pollutant” to include “radioactive materials”, 33 U.S.C. §1362(6), and the Code of Federal Regulations then provides an exception that the term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of*

¹ The regulation provides that “pollutant” includes radioactive materials, except “those regulated under the Atomic Energy Act of 1954, as amended.”

² The Department of Energy Organization Act, 42 U.S.C. § 7101, also grants DOE broad authority to achieve its nuclear safety goal.

³ *See, e.g.*, 10 C.F.R. § 830.4 (“The requirements in this Part must be implemented in a manner that provides reasonable assurance of adequate protection of workers, the public and the environment from adverse consequences, taking into account the work to be performed and the associated hazards.”); 10 C.F.R. § 820 App. A(d) (discussing importance of enforcement of nuclear safety provisions “in order to protect human health and the environment”).

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"pollutant"). Recognizing this exception, the state Water Quality Act and water quality standards include the exception that "water contaminant" does not include "source, special nuclear or by-product material." Except for those specified materials, however, radioactive materials are "water contaminants" subject to the Clean Water Act and the Water Quality Act.

The gross alpha data was corrected in the following two ways. First, U-238, U-234, and U-235-236 was subtracted from the reported gross alpha result. Second, this value was further corrected by subtracting all known AEA alpha emitters when there were available data. There were data available on Plutonium-238, Plutonium-239/240, and Americium-241 for the majority of data used in the assessment. These AEA radionuclides we found data on account for an average of 3.3% of the total gross alpha.

Analyses have determined that the listed waters contain corrected gross alpha levels exceeding the applicable criterion, that are not attributable to "source, special nuclear or by-product material," and are thus presumptively water contaminants. The source(s) of the non-AEA regulated material is not identified. The comment proposes, without evidence, a presumption that both the AEA regulated and non-AEA regulated materials have a common source and that no further investigation is necessary. Such a presumption ignores the possibility that some separate sources of non-AEA material may exist.

Furthermore, DOE Order 5400.5, "Radiation Protection of the Public and the environment" (DOE 1990, revised 1-7-93) lists the Derived Concentration Guideline (DCG) for Plutonium-239/240 as 30 pCi/L. Three of the four samples from Pueblo Canyon in 2001 exceed this value (40.6, 49.9, & 85.3 pCi/L). These samples are time-weighted composites and, therefore, likely underestimate the "first flush" concentrations. DOE Oversight Bureau grab samples collected during the same event (LANL data - 85.3 pCi/L Pu-239/240) showed up to 253 pCi/L (Pu-239/240) discharged from Pueblo Canyon. One hour later, the value was 100 pCi/L. To date, DOE has initiated no actions or studies to determine appropriate measures to reduce these discharges to below DOE's DCGs.

Listing of streams for the presence of contaminants was not at issue in either court case cited in the comment. In the case of Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426 (9th Cir. 1998), cited in the comment, the issue involved authority over permitting and enforcement. In that case the court even acknowledged that the lack of authority to enforce standards did not prevent EPA from promulgating them.

... the UMTRCA granted the EPA authority to promulgate standards of general application for the protection of the public health, safety, and the environment from hazards associated with the possession, transfer, and

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disposal of byproduct materials as defined in section 11(e)(2). 42 U.S.C. S 2022(b). The EPA was not given authority to enforce any standards they set, however.

The listing of streams for the presence of contaminants, like the promulgation of standards, is not of itself an enforcement matter. The listing informs the public that a standard has been exceeded and opens a process to determine the sources. If, after identification of the sources, enforcement is necessary the duty for enforcement will fall to whatever agency has the authority.

COMMENT:

3) Probable Sources of Impairment:

The Laboratory believes that this waterbody should not be listed as impaired for TRS or gross alpha. If NMED decides to list this waterbody, probable sources of impairment should identify "Natural Sources" as the major source of selenium. In 2000, the Cerro Grande fire within the contributing watershed resulted in debris flows, increased erosion and sedimentation. Physical and chemical changes resulted in this canyon. BMPs have been implemented by both land management agencies and the Laboratory to control erosion resulting from the fire. The Laboratory believes that insufficient time has passed for these BMPs to become fully effective in reducing and controlling storm water flows and thus in reducing and controlling the concentrations of pollutants in storm runoff water. By the time the 303(d) list is revised in 2004, we expect significant reductions of concentrations of pollutants in storm water.

This section should not include "Urban Runoff/Storm Sewers" or "Land Disposal" because these features did not and do not exist in Rendija Canyon. There is presently no active manmade source of "Erosion and Sedimentation." There is one point source discharge located in this reach. The Los Alamos County has one domestic well blow-down discharge (formally NPDES Outfall 04A176). This is unlikely to be a source of selenium.

The "Probable Sources of Impairment" should be removed for gross alpha, since there are no adequate supporting data for this listing.

***RESPONSE:** *Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into*

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consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.

NMED recognizes the numerous BMP programs that have been implemented as part of the Laboratory's SWPPP to implement its storm water general permit. We also understand that it takes time to determine if BMPs are effective. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. When subsequent data indicates that criteria for associated designated uses are not being exceeded for a particular assessment unit, we will remove it from the 303(d) list. We do not speculate when this will occur.

Probable Source code 8080 -- Watershed runoff following forest fire -- was added to all listings in the Cerro Grande fire area. Land disposal and Urban Runoff were removed as Probable Sources. Erosion and Sedimentation remain because it does not imply manmade or not.

COMMENT:

4) *Designated Use:*

Rendija Canyon is an unclassified ephemeral reach. It is assessed for Livestock Watering and Wildlife Habitat water quality standards. . However, the "Impaired Designated Use" for Wildlife Habitat, which contains the selenium standard, should be removed, because the data show only a single value for each year, not an arithmetic mean as the regulations require. The "Impaired Designated Use" for Livestock Watering for Gross Alpha should be deleted for this reach, since no adequate data support this conclusion.

***RESPONSE:** *Disagree. See above response to these concerns.*

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Los Alamos Reservoir

COMMENT:

- 1) Probable Sources of Impairment -Unknown Toxicity (Non Support):

In 2000, the Cerro Grande fire within the contributing watershed resulted in debris flows, increased erosion and sedimentation that filled Los Alamos reservoir with organic debris, sediments, and potential contaminants adhered to the sediments. Physical and chemical changes resulted in the reservoir. BMPs have been implemented by both land management agencies and the Laboratory to control erosion resulting from the fire. The Laboratory believes that insufficient time has passed for these BMPs to become fully effective in reducing and controlling storm water flows and thus in reducing and controlling the concentrations of pollutants in storm runoff water. By the time the 303(d) list is revised in 2004, we expect significant reductions of concentrations of pollutants in storm water. Moreover, considering the extent of the impact from the fire to this reservoir, it is well known that full recovery may require a period of time measure in decades. Listing this reservoir when the cause and source of impairment is well known seems unnecessary.

****RESPONSE:** NMED recognizes the numerous BMP programs that have been implemented as part of the Laboratory's SWPPP to implement its storm water general permit. We also understand that it takes time to determine if BMPs are effective. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. When subsequent data indicates that criteria for associated designated uses are not being exceeded for a particular assessment unit, we will remove it from the 303(d) list. We do not speculate when this will occur. TMDLs for lakes and/or reservoirs are not part of our watershed rotational schedule and are not scheduled for completion until 2017.*

COMMENT:

- 2) Stream Reach:

Stream reach should be defined as upper Los Alamos Canyon, above the reservoir to the headwaters in Los Alamos Canyon.

****RESPONSE:** This comment does not apply to Los Alamos Reservoir. It is a reservoir, not a stream reach.*

COMMENT:

- 3) Designated use:

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The listing for Los Alamos Reservoir includes “not supporting” for Los Alamos Reservoir for the marginal coldwater fishery use. This reservoir is not classified and thus the only uses are assessed are livestock watering and wildlife habitat.

****RESPONSE:** Marginal coldwater fishery is an existing use. The EPA-developed Assessment Database (ADB) we are using has several limitations, one of which is that there is no way to distinguish between designated uses and existing uses. The antidegradation component of a water quality standard states that existing uses will be protected, so we note them whenever they are known.*

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SPECIFIC COMMENTS-CANYONS LOCATED ON LANL PROPERTY

Los Alamos Canyon (Guaje Canyon to headwaters)

COMMENT:

1) Gross Alpha (Non Support):

NMED staff listed this assessment unit based on information from the Laboratory's Environmental Surveillance Program. However, LANL data cannot be used directly to establish violations of stream standards for gross alpha, for the following reasons. The gross alpha standard includes radium 226, but excludes radon and uranium (20.6.4.900.K NMAC). Additionally, the standard excludes radiation from source, special nuclear, and by-product material, because these substances are excluded from the definition of "water contaminant," both by the regulation (20.6.4.6.6.YY. NMAC) and by the New Mexico Water Quality Act, 74-6-2.A NMSA. NMED does not regulate source, special nuclear, or byproduct materials or alpha radiation from them. As discussed below, regulation of these materials and their radiation for public health and safety purposes is exclusively with the United States Department of Energy (DOE) for DOE facilities, and the Nuclear Regulatory Commission.

Gross alpha cannot include radioactive materials regulated by DOE under the Atomic Energy Act of 1954 (AEA). Even though the Clean Water Act defines "pollutant" to include "radioactive materials", 33 U.S.C. §1362(6), that term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of "pollutant").¹ See *Train v. Colorado Public Int. Research Group*, 426 U.S. 1 (1976); *Waste Action Project v. Dawn Mining Corp.*, 137 F.3d 1426 (9th Cir. 1998). Under the AEA, DOE has had, and continues to have, a unique and comprehensive regulatory role over nuclear safety requirements at all of its facilities, including the Laboratory.²

In addition to authorizing DOE to promulgate rules, orders and directives under the AEA "to govern the possession and use of special nuclear material, source material, and byproduct material," 42 U.S.C. § 2201(b), Congress mandated that

¹ The regulation provides that "pollutant" includes radioactive materials, except "those regulated under the Atomic Energy Act of 1954, as amended."

² The Department of Energy Organization Act, 42 U.S.C. § 7101, also grants DOE broad authority to achieve its nuclear safety goal.

³ See, e.g., 10 C.F.R. § 830.4 ("The requirements in this Part must be implemented in a manner that provides reasonable assurance of adequate protection of workers, the public and the environment from adverse consequences, taking into account the work to be performed and the associated hazards."); 10 C.F.R. § 820 App. A(d) (discussing importance of enforcement of nuclear safety provisions "in order to protect human health and the environment").

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DOE prescribe those regulations it deems necessary to govern any activity authorized pursuant to the AEA for the protection of health and the minimization of danger to life or property, 42 U.S.C. § 2201(i).

Following Congress' broad mandate, DOE promulgated extensive nuclear safety requirements (regulations and orders) governing all radioactive materials generated at its facilities, including high-level waste, transuranic waste, low-level waste, accelerator-produced waste, naturally occurring radioactive material, the radioactive component of mixed waste, high-and low-level TSCA-regulated waste, and byproduct material. These nuclear safety standards apply to the Laboratory. DOE's commitment to managing the environment,³ health and safety risks posed by its nuclear activities underscores each DOE nuclear safety requirement. *See, e.g.*, DOE "Statement of Regulatory and Deregulatory Priorities," 66 Fed. Reg. 61160, 61160 (Dec. 3, 2001); 64 Fed. Reg. 63925, 63925 (Nov. 22, 1999); 63 Fed. Reg. 61237, 61237 (Nov. 9, 1998).

The radioactive materials included in the gross alpha samples used by the NMED staff include materials regulated by DOE under the AEA. Therefore, those samples cannot be used as a basis for determining non-compliance with the gross alpha standard.

***RESPONSE:** *As the comment states, the federal Clean Water Act defines "pollutant" to include "radioactive materials", 33 U.S.C. §1362(6), and the Code of Federal Regulations then provides an exception that the term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of "pollutant"). Recognizing this exception, the state Water Quality Act and water quality standards include the exception that "water contaminant" does not include "source, special nuclear or by-product material." Except for those specified materials, however, radioactive materials are "water contaminants" subject to the Clean Water Act and the Water Quality Act.*

The gross alpha data was corrected in the following two ways. First, U-238, U-234, and U-235-236 was subtracted from the reported gross alpha result. Second, this value was further corrected by subtracting all known AEA alpha emitters when there were available data. There were data available on Plutonium-238, Plutonium-239/240, and Americium-241 for the majority of data used in the assessment. These AEA radionuclides we found data on account for an average of 3.3% of the total gross alpha.

Analyses have determined that the listed waters contain corrected gross alpha levels exceeding the applicable criterion, that are not attributable to "source, special nuclear or by-product material," and are thus presumptively water contaminants. The source(s) of the non-AEA regulated material is not identified. The comment proposes, without evidence, a presumption that both the AEA

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regulated and non-AEA regulated materials have a common source and that no further investigation is necessary. Such a presumption ignores the possibility that some separate sources of non-AEA material may exist.

Furthermore, DOE Order 5400.5, "Radiation Protection of the Public and the environment" (DOE 1990, revised 1-7-93) lists the Derived Concentration Guideline (DCG) for Plutonium-239/240 as 30 pCi/L. Three of the four samples from Pueblo Canyon in 2001 exceed this value (40.6, 49.9, & 85.3 pCi/L). These samples are time-weighted composites and, therefore, likely underestimate the "first flush" concentrations. DOE Oversight Bureau grab samples collected during the same event (LANL data - 85.3 pCi/L Pu-239/240) showed up to 253 pCi/L (Pu-239/240) discharged from Pueblo Canyon. One hour later, the value was 100 pCi/L. To date, DOE has initiated no actions or studies to determine appropriate measures to reduce these discharges to below DOE's DCGs.

Listing of streams for the presence of contaminants was not at issue in either court case cited in the comment. In the case of Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426 (9th Cir. 1998), cited in the comment, the issue involved authority over permitting and enforcement. In that case the court even acknowledged that the lack of authority to enforce standards did not prevent EPA from promulgating them.

... the UMTRCA granted the EPA authority to promulgate standards of general application for the protection of the public health, safety, and the environment from hazards associated with the possession, transfer, and disposal of byproduct materials as defined in section 11(e)(2). 42 U.S.C. S 2022(b). The EPA was not given authority to enforce any standards they set, however.

The listing of streams for the presence of contaminants, like the promulgation of standards, is not of itself an enforcement matter. The listing informs the public that a standard has been exceeded and opens a process to determine the sources. If, after identification of the sources, enforcement is necessary the duty for enforcement will fall to whatever agency has the authority.

COMMENT:

- 2) "Total Recoverable Selenium (Not Supporting)":

NMED staff listed this assessment unit for TRS based on data produced by the Laboratory. Pursuant to DOE-OB personnel, the data indicate that the levels of TRS from sampling stations upgradient of the Laboratory (i.e., west of the Laboratory) are roughly equivalent to the levels of TRS measured on the

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Laboratory or near its eastern boundary. This indicates that the TRS levels are from natural, not anthropogenic causes. Moreover, these results are from stormwater runoff, an acute event. In contrast, the state water quality standard for TRS is a chronic standard. The applicability of chronic standards to acute exposure scenarios is questionable.

****RESPONSE:** Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.*

COMMENT:

3) "Total Mercury (Full Support Impacts Observed)":

The Record of Decision (ROD) states: "Mercury was listed as Full Support Impacts Observed based on standards exceedances during grab sampling. A summary of data was provided by DOE Oversight." A single grab sample was provided by NMED for support of this evaluation. Total Mercury is a chronic standard. Therefore, NMED cannot properly evaluate use impairment on the basis of a single grab sample and should delete this parameter from the listing.

****RESPONSE:** In the past, SWQB incorporated seasonal, multiple-day sampling runs into our sampling scheme in order to calculate arithmetic mean for toxicant data with chronic criteria. The original language in NMAC 20.6.4.11.B was consistent with that sampling scheme. EPA maintains that chronic criteria should be met in a waterbody that fully supports its uses. Few States and Tribes, if any, are obtaining composite data over a 4-day sampling period for comparison to chronic criteria due primarily to budgetary and staff time constraints. EPA believes that 4-day composites are not an absolute requirement for evaluating whether chronic criteria are being met while determining use attainment status. EPA affords states the flexibility to define how they will assess use attainment with chronic criterion when 4-day composites are not available (USEPA 1997). In response to EPA's position, statistical concerns, and a desire to characterize water quality over a larger portion of the hydrograph, SWQB changed sampling schemes. We now sample once monthly from approximately March to October. Accordingly, we added the following footnote to our assessment protocols: "The chronic criteria shall be applied to the arithmetic mean of the analytical results of samples collected using applicable protocols. (206.4.11.B NMAC). The chronic screening level is 1.5 times the chronic criteria and shall be applied to grab samples."*

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The multiplier of 1.5 was also derived as a means to evaluate small data sets (USEPA 1991). This protocol is NMED's interpretation of NMAC 20.6.4.11.B in light of our change in sampling scheme. NMAC 20.6.4.11.B has been identified as requiring attention during our next triennial review.

References cited:

USEPA. 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001. Washington, D.C. 300 pp.

USEPA. 1997. Guidelines for preparation of comprehensive state water quality assessments (305(b) reports) and electronic updates). Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

*The following was added to the ROD: **Mercury was listed as Full Support Impacts Observed** because the Wildlife Habitat chronic screening criterion of 1.16 ug/L (0.77 ug/L x 1.5) was exceeded on 7/26/01 with a value of 1.69 ug/L.*

COMMENT:

4) "PCBs (Full Support, Impacts Observed)":

The data relating to concentrations of PCBs, which are the basis for listing this assessment unit for PCBs, were obtained by analyzing water samples using an analytic method known as the congener method (Method 1668A). The federal EPA has not approved this method under 40 CFR 136. Therefore, pursuant to 20.6.4.13 NMAC, these data cannot be used to determine compliance with the applicable standard.

20.6.4.13 NMAC states in part: "All methods of sample collection, preservation and analysis used in determining water quality and maintenance of these standards shall be in accordance with approved or accepted test procedures published in "Guidelines establish test procedures for the analysis of pollutants under the Clean Water Act," 40 CFR 136"

The data relating to concentrations of PCBs, which are the basis for listing this assessment unit for PCBs, were obtained by analyzing water samples using an analytic method known as the congener method (Method 1668A). The federal EPA has not approved this method under 40 CFR 136. Therefore, these data were not obtained by a method of sample analysis that is compliant with the NMAC. 20.6.4.13. NMAC requires all samples, without exception, that are used for determining water quality or maintaining water quality standards to be in accordance with these approved test procedures. Moreover, the standard for Total PCBs is a chronic numeric standard. One sample does not represent an arithmetic

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average, required by NMED regulations. The limited data (one sample) provided by NMED do not support this listing.

***RESPONSE:** *SWQB has removed the PCB listing from the 2002-2004 303(d) list because the method used is not currently in 40 CFR Part 136. NMAC 20.6.4.13.A has been identified as requiring attention during our next triennial review.*

The United States Environmental Protection Agency (EPA), Office of Water, published Method 1668, Revision A: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by HRGC/HRMS in December 1999 (USEPA 1999).

Section 1.2, page 1 of the Method states: "This Method is for use in data gathering and monitoring associated with the Clean Water Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, and the Safe Drinking Water Act."

Section 1.3, page 2, of the method states: "The detection limits and quantitation levels in this Method are usually dependent on the level of interferences and laboratory background levels rather than instrumental limitations" "The estimated method detection limit (EMDL) for CB 126 in water is 5 pg/L (picograms-per-liter; parts-per-quadrillion) with no interferences present." In New Mexico storm water samples, average detection limits (average for all congeners detected) in four samples ranged from 3.55 pg/L to 14.93 pg/L.

The Method Detection Limit in water for the 40CFR136 AROCLOR method is 1.0 ug/L or seventy one times the wildlife habitat standard of 0.014 ug/L. The 40CFR136 method is not capable of detecting PCBs at the level of the NM Wildlife Standard. Method 1668A is capable of detecting PCBs up to 2,800 times below the NM Wildlife Standard.

The DOE Oversight Bureau analyzed fish tissue from Cochiti Reservoir for PCBs using the standard AROCLOR methods in 1996. The results in two samples showed levels of PCBs at or just below the detection limit of 100 nanograms-per-gram (parts-per-billion, ppb). The EPA screening level for PCBs in fish tissue is 10 ppb (USEPA 1995) indicating some Cochiti fish samples exceeded the screening level. While the majority of the tissue samples were non-detect, we suspected that due to the high detection limits, other fish samples may have PCBs at levels that exceed the EPA screening level or 10 ppb, but were not quantifiable using the standard AROCLOR methods.

The World Health Organization (WHO) has identified 12 PCB congeners as "toxic" based on their dioxin-like toxicological response in animals. Method

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1668A not only provides an accurate assessment of Total PCB (sum of all congeners) but it also reliably quantifies the 12 dioxin-like PCBs identified by the WHO. The WHO has developed Toxic Equivalency Factors (TEFs) for these 12 PCB congeners and the methodology we use to calculate the Toxic Equivalency Quotient (TEQ) or dioxin-like toxicity due to PCBs. NMED uses Total PCBs (sum of all congeners) and TEQs to evaluate PCB fish tissue concentrations for use in fish advisories.

The DOE Oversight Bureau began using method EPA Method 1668A for determining PCBs in fish tissue in 1999 and 2000. Results from those fish tissue samples from Cochiti and Abiquiu Reservoirs and McAllister Lake (near Las Vegas, NM) have been presented to the WQCC in support of the Human Health standards. In summary, 2 of 5 samples and 6 of 10 samples from Abiquiu and Cochiti Reservoir, respectively, exceed the 10 ppb Total PCB screening level. The dioxin TEQ due to PCBs in 1 of 5 and 5 of 10 samples from Abiquiu and Cochiti reservoirs, respectively, exceed the 0.7 pico-grams-per-gram (pg/g, ppt) screening level for dioxin. The sample from McAllister Lake was below both screening levels.

After the Cero Grande fire the Oversight bureau collected samples of soils, sediments and storm water (LANL only) for PCB analysis using Method 1668A. We sampled sediments found in Cow Creek below the Viveash Fire and compared them to sediments from various LANL canyons below the Cero Grande fire. While PCBs were found in all samples, the congener patterns found in sediments from LANL canyons were very different from those found at Cow Creek, indicating different sources of PCBs. PCBs in Viveash sediments are presumed to be due to worldwide atmospheric deposition and those in LANL canyons most likely are from both atmospheric deposition and local PCB releases. The PCB congeners found in Pueblo Canyon sediments had similar patterns to those found in Pueblo Canyon storm water.

References:

USEPA. 1995. Guidance for assessing chemical contaminant data for use in fish advisories. Volume 1. Fish Sampling and Analysis. Second Edition. September 1995.

USEPA. 1999. Method 1668, Revision A: Chlorinated biphenyl congeners in water, soil, sediment, and tissue by HRGC/HRMS. EPA-821-R-00-002. December 1999.

COMMENT:

- 5) Probable Source of Impairment:

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This waterbody should not be listed as impaired for TRS or gross alpha, for the reasons stated above. In addition the findings for PCBs and mercury should be deleted because of inadequate data. If NMED decides to list this waterbody, probable sources of impairment should identify "Natural Causes" as the major source of selenium. In 2000, the Cerro Grande fire within the contributing watershed resulted in debris flows, increased erosion and sedimentation. Physical and chemical changes resulted in this canyon. BMPs have been implemented by both land management agencies and the Laboratory to control erosion resulting from the fire. The Laboratory believes that insufficient time has passed for these BMPs to become fully effective in reducing and controlling storm water flows and thus in reducing and controlling the concentrations of pollutants in storm runoff water. By the time the 303(d) list is revised in 2004, we expect significant reductions of concentrations of pollutants in storm water.

Historic industrial point sources and four permitted NPDES outfalls are present in this canyon from cooling tower discharges at TA-53 and the TA-21 Steam Plant. Discharges from NPDES outfalls (03A047, 03A048, 03A049 and 02A129) are intermittent and not likely to be a major source of selenium, gross alpha, mercury or PCBs. Additionally, Los Alamos County operates a domestic well for the water distribution system (formally NPDES Outfall 04A186). The "Probable Sources of Impairment" should be removed for gross alpha, since there are no supporting data for this listing. Additionally mercury and PCBs should be deleted based on limited data provided by NMED.

****RESPONSE:** Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.*

NMED recognizes the numerous BMP programs that have been implemented as part of the Laboratory's SWPPP to implement its storm water general permit. We also understand that it takes time to determine if BMPs are effective. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. When subsequent data indicates that criteria for associated designated uses are not being exceeded for a particular assessment unit, we will remove it from the 303(d) list. We do not speculate when this will occur.

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Los Alamos Canyon is not listed on the 303(d) list for mercury because this was assessed as Full Support, Impacts Observed following our assessment protocols. SWQB has removed the PCB listing from the 2002-2004 303(d) list because the method used is not currently in 40 CFR Part 136. NMAC 20.6.4.13.A has been identified as requiring attention during our next triennial review.

6) Stream Reach:

Stream Reach should be identified as the reach from San Ildefonso land to downstream side of Los Alamos Reservoir

****RESPONSE:** Assessment unit definition was changed to **Los Alamos Canyon (San Ildefonso bnd to headwaters)** to account for tribal portions. After reviewing fisheries data for the portion of Los Alamos Canyon upstream of the reservoir, we will likely split the reach as you have suggested and add appropriate aquatic life designated uses for the portion above the reservoir during the upcoming triennial review of the Water Quality Standards.*

COMMENT:

7) Designated Use:

Los Alamos Canyon is an unclassified ephemeral stream. It is assessed for Livestock Watering and Wildlife habitat water quality standards. The "Impaired Designated Use" for Livestock Watering should be removed, since that is where the gross alpha standard appears. The "Impaired Designated Use" for Wildlife Habitat, which contains the PCB standard, should be removed since the supporting data for PCBs are noncompliant with NMED regulations.

****RESPONSE:** Disagree. See above response to these concerns. Although the PCB listing was removed, the selenium and gross alpha listings remain. Therefore, the Impaired Designated Uses remain.*

Mortandad Canyon

COMMENT:

1) "Gross Alpha (Not Supporting)":

NMED staff listed this assessment unit based on information from the Laboratory. However, LANL data cannot be used directly to establish violations of stream standards for gross alpha, for the following reasons. The gross alpha standard includes radium 226, but excludes radon and uranium (20.6.4.900.K NMAC). Additionally, the standard excludes radiation from source, special nuclear, and

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by-product material, because these substances are excluded from the definition of “water contaminant,” both by the regulation (20.6.4.6.6.YY. NMAC) and by the New Mexico Water Quality Act, 74-6-2.A NMSA. NMED does not regulate source, special nuclear, or byproduct materials or alpha radiation from them. As discussed below, regulation of these materials and their radiation for public health and safety purposes is exclusively with the United States Department of Energy (DOE) for DOE facilities, and the Nuclear Regulatory Commission.

Gross alpha cannot include radioactive materials regulated by DOE under the Atomic Energy Act of 1954 (AEA). Even though the Clean Water Act defines “pollutant” to include “radioactive materials”, 33 U.S.C. §1362(6), that term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of “pollutant”).¹ *See Train v. Colorado Public Int. Research Group*, 426 U.S. 1 (1976); *Waste Action Project v. Dawn Mining Corp.*, 137 F.3d 1426 (9th Cir. 1998). Under the AEA, DOE has had, and continues to have, a unique and comprehensive regulatory role over nuclear safety requirements at all of its facilities, including the Laboratory.²

In addition to authorizing DOE to promulgate rules, orders and directives under the AEA “to govern the possession and use of special nuclear material, source material, and byproduct material,” 42 U.S.C. § 2201(b), Congress mandated that DOE prescribe those regulations it deems necessary to govern any activity authorized pursuant to the AEA for the protection of health and the minimization of danger to life or property, 42 U.S.C. § 2201(i).

Following Congress’ broad mandate, DOE promulgated extensive nuclear safety requirements (regulations and orders) governing all radioactive materials generated at its facilities, including high-level waste, transuranic waste, low-level waste, accelerator-produced waste, naturally occurring radioactive material, the radioactive component of mixed waste, high-and low-level TSCA-regulated waste, and byproduct material. These nuclear safety standards apply to the Laboratory. DOE’s commitment to managing the environment,³ health and safety

¹ The regulation provides that “pollutant” includes radioactive materials, except “those regulated under the Atomic Energy Act of 1954, as amended.”

² The Department of Energy Organization Act, 42 U.S.C. § 7101, also grants DOE broad authority to achieve its nuclear safety goal.

³ *See, e.g.*, 10 C.F.R. § 830.4 (“The requirements in this Part must be implemented in a manner that provides reasonable assurance of adequate protection of workers, the public and the environment from adverse consequences, taking into account the work to be performed and the associated hazards.”); 10 C.F.R. § 820 App. A(d) (discussing importance of enforcement of nuclear safety provisions “in order to protect human health and the environment”).

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risks posed by its nuclear activities underscores each DOE nuclear safety requirement. *See, e.g.*, DOE "Statement of Regulatory and Deregulatory Priorities," 66 Fed. Reg. 61160, 61160 (Dec. 3, 2001); 64 Fed. Reg. 63925, 63925 (Nov. 22, 1999); 63 Fed. Reg. 61237, 61237 (Nov. 9, 1998).

The radioactive materials included in the gross alpha samples used by the NMED staff include materials regulated by DOE under the AEA. Therefore, those samples cannot be used as a basis for determining non-compliance with the gross alpha standard.

***RESPONSE:** *As the comment states, the federal Clean Water Act defines "pollutant" to include "radioactive materials", 33 U.S.C. §1362(6), and the Code of Federal Regulations then provides an exception that the term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of "pollutant"). Recognizing this exception, the state Water Quality Act and water quality standards include the exception that "water contaminant" does not include "source, special nuclear or by-product material." Except for those specified materials, however, radioactive materials are "water contaminants" subject to the Clean Water Act and the Water Quality Act.*

The gross alpha data was corrected in the following two ways. First, U-238, U-234, and U-235-236 was subtracted from the reported gross alpha result. Second, this value was further corrected by subtracting all known AEA alpha emitters when there were available data. There were data available on Plutonium-238, Plutonium-239/240, and Americium-241 for the majority of data used in the assessment. These AEA radionuclides we found data on account for an average of 3.3% of the total gross alpha.

Analyses have determined that the listed waters contain corrected gross alpha levels exceeding the applicable criterion, that are not attributable to "source, special nuclear or by-product material," and are thus presumptively water contaminants. The source(s) of the non-AEA regulated material is not identified. The comment proposes, without evidence, a presumption that both the AEA regulated and non-AEA regulated materials have a common source and that no further investigation is necessary. Such a presumption ignores the possibility that some separate sources of non-AEA material may exist.

Furthermore, DOE Order 5400.5, "Radiation Protection of the Public and the environment" (DOE 1990, revised 1-7-93) lists the Derived Concentration Guideline (DCG) for Plutonium-239/240 as 30 pCi/L. Three of the four samples from Pueblo Canyon in 2001 exceed this value (40.6, 49.9, & 85.3 pCi/L) These samples are time-weighted composites and, therefore, likely underestimate the "first flush" concentrations. DOE Oversight Bureau grab samples collected during the same event (LANL data - 85.3 pCi/L Pu-239/240) showed up to 253

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pCi/L (Pu-239/240) discharged from Pueblo Canyon. One hour later, the value was 100 pCi/L. To date, DOE has initiated no actions or studies to determine appropriate measures to reduce these discharges to below DOE's DCGs.

Listing of streams for the presence of contaminants was not at issue in either court case cited in the comment. In the case of Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426 (9th Cir. 1998), cited in the comment, the issue involved authority over permitting and enforcement. In that case the court even acknowledged that the lack of authority to enforce standards did not prevent EPA from promulgating them.

... the UMTRCA granted the EPA authority to promulgate standards of general application for the protection of the public health, safety, and the environment from hazards associated with the possession, transfer, and disposal of byproduct materials as defined in section 11(e)(2). 42 U.S.C. S 2022(b). The EPA was not given authority to enforce any standards they set, however.

The listing of streams for the presence of contaminants, like the promulgation of standards, is not of itself an enforcement matter. The listing informs the public that a standard has been exceeded and opens a process to determine the sources. If, after identification of the sources, enforcement is necessary the duty for enforcement will fall to whatever agency has the authority.

*Note that gross alpha was changed from Non Support to Partial Support based on the revised information in the ROD: **Gross Alpha was listed as cause of Partial Support** because the Livestock Watering criterion of 15 pCi/L was exceeded two times in time-weighted composite samples in 2001. The uranium-corrected gross alpha minus plutonium and americium exceedances were as follows (pCi/L): 27.08 and 30.93.*

COMMENT:

- 2) “Selenium (Full Support, Impacts Observed)”

The proposed listing should be deleted because there is insufficient data to support the listing. NMED staff listed this assessment unit for Total Recoverable Selenium (TRS) based on a single grab sample produced by the Laboratory's Environmental Surveillance Program in 2000 (actually the sample was taken in Canada del Buey, which does not join Mortandad until close to the Rio Grande0. The Laboratory did not have a selenium exceedance in this reach in 2001. Analytical data from NPDES Outfall 051 has never exceeded the NPDES permit limit (5 ug/l) for TRS. **Selenium is a** chronic numeric standard. The limited data (one sample) for TRS provided by NMED cannot be used to evaluate compliance

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with the standard. One sample does not represent an arithmetic average, required by NMED regulations.

****RESPONSE:** In the past, SWQB incorporated seasonal, multiple-day sampling runs into our sampling scheme in order to calculate arithmetic mean for toxicant data with chronic criteria. The original language in NMAC 20.6.4.11.B was consistent with that sampling scheme. EPA maintains that chronic criteria should be met in a waterbody that fully supports its uses. Few States and Tribes, if any, are obtaining composite data over a 4-day sampling period for comparison to chronic criteria due primarily to budgetary and staff time constraints. EPA believes that 4-day composites are not an absolute requirement for evaluating whether chronic criteria are being met while determining use attainment status. EPA affords states the flexibility to define how they will assess use attainment with chronic criterion when 4-day composites are not available (USEPA 1997). In response to EPA's position, statistical concerns, and a desire to characterize water quality over a larger portion of the hydrograph, SWQB changed sampling schemes. We now sample once monthly from approximately March to October. Accordingly, we added the following footnote to our assessment protocols: "The chronic criteria shall be applied to the arithmetic mean of the analytical results of samples collected using applicable protocols. (206.4.11.B NMAC). The chronic screening level is 1.5 times the chronic criteria and shall be applied to grab samples." The multiplier of 1.5 was also derived as a means to evaluate small data sets (USEPA 1991). This protocol is NMED's interpretation of NMAC 20.6.4.11.B in light of our change in sampling scheme. NMAC 20.6.4.11.B has been identified as requiring attention during our next triennial review.*

References cited:

USEPA. 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001. Washington, D.C. 300 pp.

USEPA. 1997. Guidelines for preparation of comprehensive state water quality assessments (305(b) reports) and electronic updates). Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

COMMENT:

3) Probable Source of Impairment:

The "Probable Sources of Impairment" should be removed for gross alpha, since there are no adequate supporting data for this listing. Likewise, the "Probable Sources of Impairment for selenium should be removed, also because there is no adequate supporting data.

Industrial point sources located in this reach are NPDES Outfalls 051, 03A021, 03A022, 03A160 and 03A181. NPDES Outfall 051 discharges from the TA-50

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Radioactive Liquid Wastewater Treatment Plant and is the source for gross alpha. However, radioactivity for this constituent is regulated under DOE Derived Concentration Guidelines (DCGs). NPDES Outfalls 03A021, 03A022, 03A160 and 03A181 are intermittent discharges and have never exceeded effluent limits for selenium. DMRs have been previously provided to NMED-SWQB and EPA.

****RESPONSE:** Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.*

See also Response to Comment 1 in this section.

COMMENT:

4) Designated Use:

Mortandad Canyon is an unclassified ephemeral stream. It is assessed for Livestock Watering and Wildlife Habitat water quality standards.. However, the "Impaired Designated Use" for Livestock Watering should be removed, since that is where the gross alpha standard appears. Additionally, the "Impaired Designated Use" for Wildlife Habitat should be removed since TRS is a chronic standard and NMED has not provided adequate data to support this listing.

****RESPONSE:** Disagree. See above response to these concerns.*

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Pajarito Canyon

COMMENT:

- 1) “Gross Alpha (Not Supporting)”:

NMED staff listed this assessment unit based on information from the Laboratory. However, LANL data cannot be used directly to establish violations of stream standards for gross alpha, for the following reasons. The gross alpha standard includes radium 226, but excludes radon and uranium. 20.6.4.900.K NMAC. Additionally, the standard also excludes radiation from source, special nuclear, and by-product material, because these substances are excluded from the definition of “water contaminant,” both by the regulation (20.6.4.6.6.YY. NMAC) and by the New Mexico Water Quality Act, 74-6-2.A NMSA. NMED does not regulate source, special nuclear, or byproduct materials or alpha radiation from them. As discussed below, regulation of these materials and their radiation for public health and safety purposes is exclusively with the United States Department of Energy (DOE) for DOE facilities, and the Nuclear Regulatory Commission.

Gross alpha cannot include radioactive materials regulated by DOE under the Atomic Energy Act of 1954 (AEA). Even though the Clean Water Act defines “pollutant” to include “radioactive materials”, 33 U.S.C. §1362(6), that term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of “pollutant”).¹ See *Train v. Colorado Public Int. Research Group*, 426 U.S. 1 (1976); *Waste Action Project v. Dawn Mining Corp.*, 137 F.3d 1426 (9th Cir. 1998). Under the AEA, DOE has had, and continues to have, a unique and comprehensive regulatory role over nuclear safety requirements at all of its facilities, including the Laboratory.²

In addition to authorizing DOE to promulgate rules, orders and directives under the AEA “to govern the possession and use of special nuclear material, source material, and byproduct material,” 42 U.S.C. § 2201(b), Congress mandated that DOE prescribe those regulations it deems necessary to govern any activity

¹ The regulation provides that “pollutant” includes radioactive materials, except “those regulated under the Atomic Energy Act of 1954, as amended.”

² The Department of Energy Organization Act, 42 U.S.C. § 7101, also grants DOE broad authority to achieve its nuclear safety goal.

³ See, e.g., 10 C.F.R. § 830.4 (“The requirements in this Part must be implemented in a manner that provides reasonable assurance of adequate protection of workers, the public and the environment from adverse consequences, taking into account the work to be performed and the associated hazards.”); 10 C.F.R. § 820 App. A(d) (discussing importance of enforcement of nuclear safety provisions “in order to protect human health and the environment”).

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authorized pursuant to the AEA for the protection of health and the minimization of danger to life or property, 42 U.S.C. § 2201(i).

Following Congress' broad mandate, DOE promulgated extensive nuclear safety requirements (regulations and orders) governing all radioactive materials generated at its facilities, including high-level waste, transuranic waste, low-level waste, accelerator-produced waste, naturally occurring radioactive material, the radioactive component of mixed waste, high-and low-level TSCA-regulated waste, and byproduct material. These nuclear safety standards apply to the Laboratory. DOE's commitment to managing the environment,³ health and safety risks posed by its nuclear activities underscores each DOE nuclear safety requirement. *See, e.g.,* DOE "Statement of Regulatory and Deregulatory Priorities," 66 Fed. Reg. 61160, 61160 (Dec. 3, 2001); 64 Fed. Reg. 63925, 63925 (Nov. 22, 1999); 63 Fed. Reg. 61237, 61237 (Nov. 9, 1998).

The radioactive materials included in the gross alpha samples used by the NMED staff include materials regulated by DOE under the AEA. Therefore, those samples cannot be used as a basis for determining non-compliance with the gross alpha standard.

The draft listing should be corrected to remove the Probable Cause of Impairment for gross alpha. Also the "Impaired Designated Use" for Livestock Watering should be removed, since that is where the gross alpha standard appears.

***RESPONSE:** *As the comment states, the federal Clean Water Act defines "pollutant" to include "radioactive materials", 33 U.S.C. §1362(6), and the Code of Federal Regulations then provides an exception that the term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of "pollutant"). Recognizing this exception, the state Water Quality Act and water quality standards include the exception that "water contaminant" does not include "source, special nuclear or by-product material." Except for those specified materials, however, radioactive materials are "water contaminants" subject to the Clean Water Act and the Water Quality Act.*

The gross alpha data was corrected in the following two ways. First, U-238, U-234, and U-235-236 was subtracted from the reported gross alpha result. Second, this value was further corrected by subtracting all known AEA alpha emitters when there were available data. There were data available on Plutonium-238, Plutonium-239/240, and Americium-241 for the majority of data used in the assessment. These AEA radionuclides we found data on account for an average of 3.3% of the total gross alpha.

Analyses have determined that the listed waters contain corrected gross alpha levels exceeding the applicable criterion, that are not attributable to "source,

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special nuclear or by-product material," and are thus presumptively water contaminants. The source(s) of the non-AEA regulated material is not identified. The comment proposes, without evidence, a presumption that both the AEA regulated and non-AEA regulated materials have a common source and that no further investigation is necessary. Such a presumption ignores the possibility that some separate sources of non-AEA material may exist.

Furthermore, DOE Order 5400.5, "Radiation Protection of the Public and the environment" (DOE 1990, revised 1-7-93) lists the Derived Concentration Guideline (DCG) for Plutonium-239/240 as 30 pCi/L. Three of the four samples from Pueblo Canyon in 2001 exceed this value (40.6, 49.9, & 85.3 pCi/L). These samples are time-weighted composites and, therefore, likely underestimate the "first flush" concentrations. DOE Oversight Bureau grab samples collected during the same event (LANL data - 85.3 pCi/L Pu-239/240) showed up to 253 pCi/L (Pu-239/240) discharged from Pueblo Canyon. One hour later, the value was 100 pCi/L. To date, DOE has initiated no actions or studies to determine appropriate measures to reduce these discharges to below DOE's DCGs.

Listing of streams for the presence of contaminants was not at issue in either court case cited in the comment. In the case of Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426 (9th Cir. 1998), cited in the comment, the issue involved authority over permitting and enforcement. In that case the court even acknowledged that the lack of authority to enforce standards did not prevent EPA from promulgating them.

... the UMTRCA granted the EPA authority to promulgate standards of general application for the protection of the public health, safety, and the environment from hazards associated with the possession, transfer, and disposal of byproduct materials as defined in section 11(e)(2). 42 U.S.C. § 2022(b). The EPA was not given authority to enforce any standards they set, however.

The listing of streams for the presence of contaminants, like the promulgation of standards, is not of itself an enforcement matter. The listing informs the public that a standard has been exceeded and opens a process to determine the sources. If, after identification of the sources, enforcement is necessary the duty for enforcement will fall to whatever agency has the authority.

COMMENT:

- 2) "Total Recoverable Selenium (Not Supporting)":

NMED staff listed this assessment unit for TRS based on data produced by the Laboratory. Pursuant to DOE-OB personnel, the data indicate that the levels of

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TRS from sampling stations upgradient of the Laboratory (i.e., west of the Laboratory) are roughly equivalent to the levels of TRS measured on the Laboratory or near its eastern boundary. This indicates that the TRS levels are from natural, not anthropogenic causes. Moreover, these results are from stormwater runoff, an acute event. In contrast, the state water quality standard for TRS is a chronic standard. The applicability of chronic standards to acute exposure scenarios is questionable.

****RESPONSE:** Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.*

COMMENT:

- 3) Total Mercury (Partial Support):

NMED staff listed this assessment unit based on data provided by the Laboratory. Please note that the data was analyzed by more than one method (EPA and Generic ETVAA). The results of this split analysis showed one split exceeding the standard (EPA method); the other (Generic method) complying with the standard.

Both results were qualified as TOTC, which is a calculated value. Total Mercury was removed from NMED's list based on this information. NMED provided a modified list to the Laboratory, excluding Total Mercury, in a meeting on July 17, 2002.

****RESPONSE:** As the comment states, Total Mercury was removed as a Probable Cause of Non Support for **Pajarito Canyon (Rio Grande to headwaters)** after re-evaluation of the data. The draft listing was based solely on TOTC values (numbers values calculated from other results) versus results determined directly from time-weighted composite sampling. Therefore, the listing was removed.*

COMMENT:

- 4) Probable Sources of Impairment:

This waterbody should not be listed as impaired for TRS, gross alpha, or total mercury for the reasons stated above. If NMED decides to list this waterbody, probable sources of impairment should identify "Natural Sources" as the major

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source of selenium. In 2000, the Cerro Grande fire within the contributing watershed resulted in debris flows, increased erosion and sedimentation. Physical and chemical changes resulted in this canyon. BMPs have been implemented by both land management agencies and the Laboratory to control erosion resulting from the fire. The Laboratory believes that insufficient time has passed for these BMPs to become fully effective in reducing and controlling storm water flows and thus in reducing and controlling the concentrations of pollutants in storm runoff water. By the time the 303(d) list is revised in 2004, we expect significant reductions of concentrations of pollutants in storm water. In addition, the Laboratory has implemented BMPs under its recently adopted NPDES multi-sector stormwater permit. The Laboratory does not believe that sufficient time has transpired to allow an evaluation of the effectiveness of these BMPs.

One industrial point source is present in this canyon from well blowdown (formerly NPDES Outfall 04A161). Discharge from this outfall is intermittent and not likely to be a major source of selenium, mercury or gross alpha. DMRs have been previously provided to NMED-SWQB and EPA regarding effluent quality. The only uses that are assessed are Livestock Watering and Wildlife Habitat. However, the designated use impairment for Wildlife Habitat which includes selenium should be removed. The "Impaired Designated Use" for Livestock Watering, which includes Gross Alpha, should be removed. Total Mercury should also be removed since it was based on a calculated result.

***RESPONSE:** *As noted previously, Total Mercury was removed as a Probable Cause of Non Support for Pajarito Canyon. NMED recognizes the numerous BMP programs that have been implemented as part of the Laboratory's SWPPP to implement its storm water general permit. We also understand that it takes time to determine if BMPs are effective. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. When subsequent data indicates that criteria for associated designated uses are not being exceeded for a particular assessment unit, we will remove it from the 303(d) list. We do not speculate when this will occur.*

Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.

COMMENT:

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5) Stream Reach:

Stream Reach should be defined as Pajarito Canyon at State Road 502 to the headwaters of Pajarito Canyon. This canyon also receives drainage from other major canyons (Three Mile Canyon, Two Mile Canyon and Starmers Gulch).

****RESPONSE:** Assessment unit are defined in hydrologic terms whenever possible (i.e., from one hydrologic feature to another).*

COMMENT:

6) Designated Use:

Pajarito Canyon is an unclassified ephemeral stream. It is assessed for Livestock Watering and Wildlife Habitat water quality standards.

****RESPONSE:** Thank you for your comment.*

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Water Canyon:

COMMENT:

- 1) "Total Recoverable Selenium (Not Supported)":

NMED staff listed this assessment unit for TRS based on data produced by Los Alamos National Laboratory. Pursuant to DOE-OB personnel, the data indicate that the levels of TRS from sampling stations upgradient of the Laboratory (i.e., west of the Laboratory) are roughly equivalent to the levels of TRS measured on the Laboratory or near its eastern boundary. This indicates that the TRS levels are from natural, not anthropogenic causes. Moreover, these results are from stormwater runoff, an acute event. In contrast, the state water quality standard for TRS is a chronic standard. The applicability of chronic standards to acute exposure scenarios is questionable.

** **RESPONSE:** Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.*

COMMENT:

- 2) Gross Alpha (Non Support):

NMED staff listed this assessment unit based on information from the Laboratory. However, LANL data cannot be used directly to establish violations of stream standards for gross alpha, for the following reasons. The gross alpha standard includes radium 226, but excludes radon and uranium (20.6.4.900.K NMAC). Additionally, the standard excludes radiation from source, special nuclear, and by-product material, because these substances are excluded from the definition of "water contaminant," both by the regulation (20.6.4.6.6.YY. NMAC) and by the New Mexico Water Quality Act, 74-6-2.A NMSA. NMED does not regulate source, special nuclear, or byproduct materials or alpha radiation from them. As discussed below, regulation of these materials and their radiation for public health and safety purposes is exclusively with the United States Department of Energy (DOE) for DOE facilities, and the Nuclear Regulatory Commission.

Gross alpha cannot include radioactive materials regulated by DOE under the Atomic Energy Act of 1954 (AEA). Even though the Clean Water Act defines

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“pollutant” to include “radioactive materials”, 33 U.S.C. §1362(6), that term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of “pollutant”).¹ *See Train v. Colorado Public Int. Research Group*, 426 U.S. 1 (1976); *Waste Action Project v. Dawn Mining Corp.*, 137 F.3d 1426 (9th Cir. 1998). Under the AEA, DOE has had, and continues to have, a unique and comprehensive regulatory role over nuclear safety requirements at all of its facilities, including the Laboratory.²

In addition to authorizing DOE to promulgate rules, orders and directives under the AEA “to govern the possession and use of special nuclear material, source material, and byproduct material,” 42 U.S.C. § 2201(b), Congress mandated that DOE prescribe those regulations it deems necessary to govern any activity authorized pursuant to the AEA for the protection of health and the minimization of danger to life or property, 42 U.S.C. § 2201(i).

Following Congress’ broad mandate, DOE promulgated extensive nuclear safety requirements (regulations and orders) governing all radioactive materials generated at its facilities, including high-level waste, transuranic waste, low-level waste, accelerator-produced waste, naturally occurring radioactive material, the radioactive component of mixed waste, high-and low-level TSCA-regulated waste, and byproduct material. These nuclear safety standards apply to the Laboratory. DOE’s commitment to managing the environment,³ health and safety risks posed by its nuclear activities underscores each DOE nuclear safety requirement. *See, e.g.*, DOE “Statement of Regulatory and Deregulatory Priorities,” 66 Fed. Reg. 61160, 61160 (Dec. 3, 2001); 64 Fed. Reg. 63925, 63925 (Nov. 22, 1999); 63 Fed. Reg. 61237, 61237 (Nov. 9, 1998).

The radioactive materials included in the gross alpha samples used by the NMED staff include materials regulated by DOE under the AEA. Therefore, those samples cannot be used as a basis for determining non-compliance with the gross alpha standard.

¹ The regulation provides that “pollutant” includes radioactive materials, except “those regulated under the Atomic Energy Act of 1954, as amended.”

² The Department of Energy Organization Act, 42 U.S.C. § 7101, also grants DOE broad authority to achieve its nuclear safety goal.

³ *See, e.g.*, 10 C.F.R. § 830.4 (“The requirements in this Part must be implemented in a manner that provides reasonable assurance of adequate protection of workers, the public and the environment from adverse consequences, taking into account the work to be performed and the associated hazards.”); 10 C.F.R. § 820 App. A(d) (discussing importance of enforcement of nuclear safety provisions “in order to protect human health and the environment”).

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Also, the Record of Decision (ROD) is incomplete and does not support this listing.

* **RESPONSE:** *As the comment states, the federal Clean Water Act defines "pollutant" to include "radioactive materials", 33 U.S.C. §1362(6), and the Code of Federal Regulations then provides an exception that the term does not include material regulated under the AEA, 40 C.F.R. §122.2 (definition of "pollutant"). Recognizing this exception, the state Water Quality Act and water quality standards include the exception that "water contaminant" does not include "source, special nuclear or by-product material." Except for those specified materials, however, radioactive materials are "water contaminants" subject to the Clean Water Act and the Water Quality Act.*

The gross alpha data was corrected in the following two ways. First, U-238, U-234, and U-235-236 was subtracted from the reported gross alpha result. Second, this value was further corrected by subtracting all known AEA alpha emitters when there were available data. There were data available on Plutonium-238, Plutonium-239/240, and Americium-241 for the majority of data used in the assessment. These AEA radionuclides we found data on account for an average of 3.3% of the total gross alpha.

Analyses have determined that the listed waters contain corrected gross alpha levels exceeding the applicable criterion, that are not attributable to "source, special nuclear or by-product material," and are thus presumptively water contaminants. The source(s) of the non-AEA regulated material is not identified. The comment proposes, without evidence, a presumption that both the AEA regulated and non-AEA regulated materials have a common source and that no further investigation is necessary. Such a presumption ignores the possibility that some separate sources of non-AEA material may exist.

Furthermore, DOE Order 5400.5, "Radiation Protection of the Public and the environment" (DOE 1990, revised 1-7-93) lists the Derived Concentration Guideline (DCG) for Plutonium-239/240 as 30 pCi/L. Three of the four samples from Pueblo Canyon in 2001 exceed this value (40.6, 49.9, & 85.3 pCi/L) These samples are time-weighted composites and, therefore, likely underestimate the "first flush" concentrations. DOE Oversight Bureau grab samples collected during the same event (LANL data - 85.3 pCi/L Pu-239/240) showed up to 253 pCi/L (Pu-239/240) discharged from Pueblo Canyon. One hour later, the value was 100 pCi/L. To date, DOE has initiated no actions or studies to determine appropriate measures to reduce these discharges to below DOE's DCGs.

Listing of streams for the presence of contaminants was not at issue in either court case cited in the comment. In the case of Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426 (9th Cir. 1998), cited in the comment, the issue

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involved authority over permitting and enforcement. In that case the court even acknowledged that the lack of authority to enforce standards did not prevent EPA from promulgating them.

... the UMTRCA granted the EPA authority to promulgate standards of general application for the protection of the public health, safety, and the environment from hazards associated with the possession, transfer, and disposal of byproduct materials as defined in section 11(e)(2). 42 U.S.C. S 2022(b). The EPA was not given authority to enforce any standards they set, however.

The listing of streams for the presence of contaminants, like the promulgation of standards, is not of itself an enforcement matter. The listing informs the public that a standard has been exceeded and opens a process to determine the sources. If, after identification of the sources, enforcement is necessary the duty for enforcement will fall to whatever agency has the authority.

*The ROD has been revised to the following: **Gross Alpha was listed as Non Support** because the Livestock Watering criterion of 15 pCi/L was exceeded 12 times in time-weighted composite samples in 2001. The uranium-corrected gross alpha minus plutonium and americium exceedances were as follows (pCi/L): 464.99, 365.49, 474.59, 94.69, 49.86, 1587.38, 210.34, 847.15, 21.16, 418.19, 223.70, and 442.07.*

COMMENT:

- 3) “Total Mercury (Full Support, Impacts Observed)”:

NMED staff listed this assessment unit based on information from the Laboratory. The single Total Mercury value was qualified as TOTC, which is a calculated value. This parameter should be eliminated from the list.

***RESPONSE:** *Agreed. Mercury was removed as Full Support, Impact Observed for Water Canyon.*

COMMENT:

- 4) Probable Source of Impairment:

This waterbody should not be listed as impaired for TRS, gross alpha, or total mercury for the reasons stated above. If NMED decides to list this waterbody, probable sources of impairment should identify “Natural Sources” as the major source of selenium. In 2000, the Cerro Grande fire within the contributing watershed resulted in debris flows, increased erosion and sedimentation. Physical and chemical changes resulted in this canyon. BMPs have been implemented by both land management agencies and the Laboratory to control erosion resulting

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from the fire. The Laboratory believes that insufficient time has passed for these BMPs to become fully effective in reducing and controlling storm water flows and thus in reducing and controlling the concentrations of pollutants in storm runoff water. By the time the 303(d) list is revised in 2004, we expect significant reductions of concentrations of pollutants in storm water. In addition, the Laboratory has implemented BMPs under its recently adopted NPDES multi-sector stormwater permit. The Laboratory does not believe that sufficient time has transpired to allow an evaluation of the effectiveness of these BMPs.

This section should not include "Urban Runoff/Storm Sewers" because these features did not and do not exist in Water Canyon. Industrial point sources are present in this canyon from four NPDES outfalls (03A028, 03A130, 03A185, 05A097). Discharges from these outfalls are intermittent and not likely to be a major source of selenium, mercury or gross alpha.

****RESPONSE:** Natural Sources, Erosion and Sedimentation, and Watershed Runoff Following Forest Fire have been noted as Probable Sources of impairment. Urban Runoff was removed as a Probable Source of Impairment. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. Discrimination between natural versus anthropogenic is undertaken during subsequent TMDL or de-list rationales, not during the listing process. The above comments will be taken into consideration during that time. The vast amount of data available for these canyons through LANL's monitoring efforts will greatly assist in the development of subsequent TMDLs or de-list rationales.*

NMED recognizes the numerous BMP programs that have been implemented as part of the Laboratory's SWPPP to implement its storm water general permit. We also understand that it takes time to determine if BMPs are effective. NMED lists impaired water bodies (i.e., assessment units) on the 303(d) list based on ambient field data assessed according to our current assessment protocols. When subsequent data indicates that criteria for associated designated uses are not being exceeded for a particular assessment unit, we will remove it from the 303(d) list. We do not speculate when this will occur.

COMMENT:

5) Designated Use:

Water Canyon is an unclassified ephemeral stream. It is assessed for Livestock Watering and Wildlife Habitat water quality standards.

****RESPONSE:** Thank you for your comment.*

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Ancho Canyon:

COMMENT:

- 1) “Total Recoverable Selenium (Partial Support)”

NMED staff listed this assessment unit for TRS based on data produced by Los Alamos National Laboratory. Pursuant to DOE-OB personnel, the data indicate that the levels of TRS from sampling stations upgradient of the Laboratory (i.e., west of the Laboratory) are roughly equivalent to the levels of TRS measured on the Laboratory or near its eastern boundary. This indicates that the TRS levels are from natural, not anthropogenic causes. Additionally, selenium is a chronic numeric standard. The limited data (three samples) provided by NMED do not support the “Partial Support” listing. The three values should be averaged to produce a “Full Support, Impacts Observed” evaluation. Moreover, these results are from stormwater runoff, an acute event. In contrast, the state water quality standard for TRS is a chronic standard. The applicability of chronic standards to acute exposure scenarios is questionable.

****RESPONSE:** In the past, SWQB incorporated seasonal, multiple-day sampling runs into our sampling scheme in order to calculate arithmetic mean for toxicant data with chronic criteria. The original language in NMAC 20.6.4.11.B was consistent with that sampling scheme. EPA maintains that chronic criteria should be met in a waterbody that fully supports its uses. Few States and Tribes, if any, are obtaining composite data over a 4-day sampling period for comparison to chronic criteria due primarily to budgetary and staff time constraints. EPA believes that 4-day composites are not an absolute requirement for evaluating whether chronic criteria are being met while determining use attainment status. EPA affords states the flexibility to define how they will assess use attainment with chronic criterion when 4-day composites are not available (USEPA 1997). In response to EPA’s position, statistical concerns, and a desire to characterize water quality over a larger portion of the hydrograph, SWQB changed sampling schemes. We now sample once monthly from approximately March to October. Accordingly, we added the following footnote to our assessment protocols: “The chronic criteria shall be applied to the arithmetic mean of the analytical results of samples collected using applicable protocols. (206.4.11.B NMAC). The chronic screening level is 1.5 times the chronic criteria and shall be applied to grab samples.” The multiplier of 1.5 was also derived as a means to evaluate small data sets (USEPA 1991). This protocol is NMED’s interpretation of NMAC 20.6.4.11.B in light of our change in sampling scheme. NMAC 20.6.4.11.B has been identified as requiring attention during our next triennial review.*

References cited:

USEPA. 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001. Washington, D.C. 300 pp.

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USEPA. 1997. Guidelines for preparation of comprehensive state water quality assessments (305(b) reports) and electronic updates). Office of Wetlands, Oceans, and Watersheds. Office of Water. Washington D.C.

*We re-evaluated the data against a chronic screening level of 1.5 times the chronic criteria for selenium. Based on this re-assessment of the data, **Ancho Canyon was removed from the 303(d) list** because all measurements were below 7.5 ug/L (1.5 x the chronic criteria of 5 ug/L).*

COMMENT:

2) Probable Source of Impairment:

This waterbody should not be listed as impaired for TRS for the reasons stated above. If NMED decides to list this waterbody, probable sources of impairment should identify "Natural Sources" as the major source of selenium. In 2000, the Cerro Grande fire within the contributing watershed resulted in debris flows, increased erosion and sedimentation. Physical and chemical changes resulted in this canyon. BMPs have been implemented by both land management agencies and the Laboratory to control erosion resulting from the fire. The Laboratory believes that insufficient time has passed for these BMPs to become fully effective in reducing and controlling storm water flows and thus in reducing and controlling the concentrations of pollutants in storm runoff water. By the time the 303(d) list is revised in 2004, we expect significant reductions of concentrations of pollutants in storm water.

This section should not include "Urban Runoff/Storm Sewers" or "Land Disposal" because these features did not and do not exist in Ancho Canyon. Industrial point sources are not present in this canyon. There is presently no active manmade source of "Erosion and Sedimentation."

***RESPONSE:** *Ancho Canyon was removed from the 303(d) list because all measurements were below 7.5 ug/L (1.5 x the chronic criteria of 5 ug/L).*

COMMENT:

3) Designated Use.

Ancho Canyon is an unclassified ephemeral stream. It is assessed for Livestock Watering and Wildlife Habitat standards.

***RESPONSE:** *Thank you for your comment.*